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Interlinguistic Comparison of International Accounting Standards: The Case of Uncertainty Expressions

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Key words: International accounting standards; Translations; Uncertainty expressions

Abstract: *This research examines some of the problems encountered in translating uncertainty expressions in the bilingual issue of accounting standards. The simultaneous publication of standards in more than one language may diminish the uniformity of reporting practice due to language differences in the interpretation of equivalent uncertainty expressions. The standards considered in this study are those issued in English and French by the International Accounting Standards Committee. The translated uncertainty expressions were first inventoried and compared. The experimental subjects providing subjective probabilities associated with each expression were anglophone and francophone senior accounting students in Alberta and Québec, respectively. The results show that the anglophone and francophone respondents' subjective probability numbers associated with many equivalent uncertainty expressions are not similarly distributed. In addition, this finding does not appear to be due to demographic characteristics of the subjects.*

By definition, international accounting standards are intended to be applied by accountants in different countries, often working in different languages. Uniform accounting practices among companies is one of the key objectives of generally accepted accounting principles, thus enhancing the comparability of financial statements. The increasing trends toward economic integration and global investments have amplified the need for international financial statement comparability, as users of financial statements have called for better harmonization among different national accounting standards. This increases the need for translations of international standards to be applied by accountants and auditors working in many different languages.¹

The publication of accounting standards in more than one language is already an issue confronting accounting standard setters issuing standards across linguistic

boundaries, such as the International Accounting Standards Committee (IASC) and the Canadian Accounting Standards Committee (ASC). Many accounting pronouncements are written in one language by the standards-setting committee and are then translated. The translators are often staff members of the standard-setting committee itself or even staff members of an equivalent committee in a country needing a version of the standards in a different language. If users of standards working in the target language interpret the translated words in a manner different from the original intention given the specific context, ostensibly uniform accounting standards will be applied differently as a function of the language of reference of the user. Financial statements which are not comparable may result from these translation differences.

The purpose of this research study is to determine if the translation of accounting standards results in differences in the concepts conveyed in the standards because of the words selected in the translation process. It is inherently difficult to check the consistency of the precise meanings conveyed by words in different languages as a common point of reference is needed. The empirical test undertaken in this study overcomes this problem by asking subjects to translate uncertainty expressions into probability numbers.

In this paper, the translation of words and expressions used to denote levels of uncertainty in the international accounting standards are examined in their English and French-Canadian versions. Uncertainty was chosen for analysis because it is one of the most important issues in financial reporting,² and because it is possible to ask users of accounting standards to express quantitatively their perceptions of the degree of uncertainty represented by a particular expression. Although no published research has appeared to indicate that differences in the translations of accounting standards have caused reporting errors or different investment decisions, differences in the disclosure of the same economic event have occurred in the application of the American standard that governs contingent losses.³ With the increasing importance of international investment and the continued issue of international accounting standards, the potential for inconsistencies with respect to uncertainty resulting from the translation process increases.

Literature Review

Previous experimental research examining the perception of words that express uncertainty includes Bass et al.,⁴ Chesley,⁵ Budescu and Wallsten,⁶ Lichtenstein and Newman,⁷ and Davidson.⁸ These results indicate there are significant differences among individuals with respect to the probabilities that they associate with uncertainty expressions, including many used in the Canadian and American accounting standards. Accounting researchers, including Harrison and Tomassini,⁹ Jiambalvo and Wilner,¹⁰ Reckers and Schultz,¹¹ and Schultz and Reckers,¹² have also considered the role of uncertainty in the recording of contingent losses. These past studies tested for: differences in probabilities given by subjects for various uncertainty expressions, differences between groups of subjects, effects of different elicitation methods, effects of different types of loss scenarios given to subjects, and the effects of differences in individual attributes. Other findings in these studies include the existence of:

intra-subject consistency of the probabilities associated with each expression, variations in subjective probabilities depending on the context, and an interaction between uncertainty and materiality in an accounting context. No previous study has considered the effect of translations of accounting standards into languages other than English.

Development of Theory and Testing Strategy

The reporting of contingent losses is an example of the utmost importance of the interpretation of uncertainty expressions. Standards regulating the reporting of contingent losses have been issued as international standards by the IASC as IAS 10, but also by the ASC as Section 3290 of the Canadian Institute of Chartered Accountants (CICA) Handbook and by the FASB in the United States as FAS 5. The intent of all these standards is quite similar. If the likelihood of an event is above a certain threshold, and if the amount of the loss conditional on the event occurring can be reasonably estimated, this amount should be recorded by an accrual in the accounting records. The English version of IAS 10 states that if a loss is “probable”, it should be accrued.

If the likelihood of the loss is below another threshold (“remote” in IAS 10), no accounting entry or other disclosure is required. If a contingent loss is not accrued, footnote disclosure is required unless the possibility of the loss is “remote”. If the perceived likelihood of the event is between the high and low thresholds, or if the amount of the potential loss cannot be reasonably determined, disclosure is made by a note to the financial statements. Thus the interpretation of the uncertainty words used in the standard govern how a contingent loss will be disclosed. If different accountants believe that the uncertainty expressions used indicate different probability levels, then the nature of disclosure of similar contingent losses could vary.

The attainment of the consistent application of accounting standards is entirely dependent on the selection of the words used to specify the different thresholds of disclosure. Three separate cognitive steps occur in the process of applying accounting standards.¹³ The first step is the perception and encoding of the words being used (such as “remote” in IAS 10) from the written word to a cognitive signal. Next the word is parsed, or converted from a cognitive signal of the written word to a mental representation indicating the meaning of the signal. Finally this mental representation is utilized for decision making. Experiments have found that after written material has been read and parsed, the exact words used are no longer remembered. Only the concept is retained in memory.¹⁴ The implication of this finding is that accountants will focus on the probability level they believe is being conveyed by the uncertainty words in the standard rather than on the precise words used. Thus the probability level implied by the uncertainty expressions is critical.

Accounting standards such as IAS 10 are especially sensitive to translations as the specific uncertainty expressions used determine the accounting treatment and disclosure that must be made. However, consistent application in different languages requires that the mental representations such as the implied probability levels provided by the translated expressions should not vary systematically according to language.

Two kinds of differences in mental representations can result from the translation process. One difference is that the mean probabilities associated with the uncertainty expression may not be the same in each language, thus indicating that the concept conveyed by the expression is not the same. A second difference is the degree of consensus on the probability associated with the uncertainty expression may not be the same in each language, thus indicating that the precision of the expression is not the same. The major difference is the use of an uncertainty expression in the target language that conveys a different mental representation of probability level compared to the probability conveyed by the expression in the original language. Concept ambiguity that is higher in one language may lead to less consistency of disclosure treatment selected by accountants working in that language.

To test the consistency of the mental representations conveyed by the uncertainty expressions used in the international standards, the empirical test used by Lichtenstein and Newman¹⁵ and suggested by Ashton¹⁶ for an accounting context was used. This test compares the levels and precisions of probabilities associated by anglophones and francophones with the uncertainty expressions used in the international standards. This method is similar to the Osgood Semantic Differential technique.¹⁷ Isolated words are used as the unit of analysis, even though the uncertainty expressions are found in the context of specific standards. This approach appears to be justified as research in cognitive psychology indicates that people do not wait for the end of a sentence before developing mental representations of the words used in the sentence.¹⁸ Also, as suggested by Osgood, the connotative meanings of the uncertainty expressions are placed on a scale, in this case the probability scale.

This study is intended only to consider if translation differences are occurring. It is not intended to determine if these translation differences have resulted in different accounting disclosures or investment decisions. If the findings of this study result in more careful selection of words in the translation process, then the risk of inconsistent disclosures should be reduced.

Analysis of Translations

An examination of all the pronouncements of the IASC up to IAS 24 issued in English and French in Canada was undertaken to determine which uncertainty expressions were used and how equivalent expressions were stated in English and French. Results are summarized in Table 1. Similar problems in translating uncertainty expressions are also found in the Canadian standards, which are also issued in both English and French. For comparative purposes the uncertainty expressions found in the IAS pronouncements that also appear in the Canadian standards are also included.

The lack of consistency in the translations from English into French expressions presented in Table 1 demonstrates how difficult it is to translate uncertainty expressions. For example, in IAS 10, "remote" in the English version is translated as both "fort peu probable" and "très peu probable" and a "remote possibility" in English appears as both a "risque minime" and a "possibilité minime" in the French version. "Normally" is translated into three French expressions: "habituellement," "normalement," and "en général." "Usually" is translated into four French expressions:

Table 1. Uncertainty expressions in IASC pronouncements

| English | French | IAS chapter and paragraph |
|-----------------------------|--------------------------------------|---|
| always | toujours | 19.43, 22.09, CICA |
| beyond any reasonable doubt | quasi-absolu | 12.45, 12.48 |
| certainty | certitude | 18.07, CICA |
| customary | d'usage | 2.10 |
| entirely or substantially | la totalité ou une partie importante | 2.21 |
| frequently | souvent | 19.23, CICA |
| frequently | fréquemment | CICA |
| generally | (no translation) | 12.15 |
| generally | généralement | 10.21, 12.28, 12.33, 12.35, 13.14, 21.23, CICA |
| generally | habituellement | CICA |
| likely | susceptible | 12.43, CICA |
| likely | probable | CICA |
| likely | tout à fait possible | CICA |
| negligible risk | risque négligeable | 18.09 |
| normally | normalement | 1.19, 10.21, 12.19, 12.43, 18.21, 21.20, 22.16, 22.24, CICA |
| normally | d'ordinaire | CICA |
| normally | en général | 19.06, 19.09, 19.17, CICA |
| normally | généralement | CICA |
| normally | habituellement | 18.16, CICA |
| normally | d'usage | CICA |
| often | souvent | 11.13, 12.08, 19.20, CICA |
| ordinarily | normalement | 2.25, CICA |
| probable | très probable | 10.06 |
| probable | probable | 10.08, 10.25, 10.27, 10.29, 19.49, 22.17, 22.44, CICA |
| probable | vraisemblable | CICA |
| reasonable assurance | raisonnablement certain | 13.11, 13.23, 18.20, 20.16, 20.18, 20.37, CICA |
| reasonable assurance | degré raisonnable de certitude | CICA |
| reasonable assurance | assuré vraisemblablement | CICA |
| reasonable assurance | pratiquement assuré | CICA |
| reasonable assurance | vraisemblablement sûr | CICA |
| reasonable assurance | raisonnablement sûr | CICA |
| reasonable assurance | certitude raisonnable | CICA |
| reasonable certainty | raisonnablement certain | 17.46 |
| reasonable certainty | un bon degré de certitude | CICA |
| reasonably certain | degré raisonnable de certitude | 17.20 |
| reasonably certain | pratiquement assuré | 17.02 |
| reasonably certain | raisonnablement certain | CICA |
| reasonably certain | raisonnablement assuré | CICA |
| reasonably expected | raisonnablement certain | 9.18, 9.21 |
| reasonable expectation | il est raisonnable de s'attendre à | 12.21, 12.44, CICA |
| reasonable expectation | assez bonnes chances | CICA |
| reasonable to expect | pouvoir raisonnablement s'attendre à | 21.34 |

continued...

Table 1. *continued*

| English | French | IAS chapter and paragraph |
|--------------------------|----------------------------|--|
| reasonable to assume | avoir des raisons à croire | 12.31, 12.51, 12.52 |
| reasonably be determined | raisonnablement déterminer | 18.19 |
| remote | fort peu probable | 10.12 |
| remote | très peu probable | 10.06 |
| remote possibility | possibilité minime | 10.25 |
| remote possibility | risque minime | 10.28 |
| significant uncertainty | incertitude importante | 18.25 |
| sometimes | parfois | 10.23, 12.32, 12.36, 12.39, 13.10, 13.11, 17.20, 17.39, 19.32, 19.44, 20.13, 20.25, 20.28, 22.22, CICA |
| sometimes | quelquefois | 1.08, 21.11 |
| substantially | pratiquement | 11.09 |
| usually | généralement | 13.10, 13.17, 18.23, 21.09, 21.12, CICA |
| usually | d'habitude | 9.09, CICA |
| usually | en général | 19.05, 19.08, 19.10, 19.25, 19.26, 19.27, 19.28, 19.44, CICA |
| usually | habituellement | 9.09, 10.25, 11.13, 11.19, 12.34, 13.09, 13.11, 17.21, 17.33, 20.04, 20.11, 20.27, CICA |
| usually | d'ordinaire | CICA |
| usually | dans le plupart des cas | CICA |
| virtually certain | quasi-certitude | 10.14, CICA |

Note: "CICA" indicates that the same word pair appears in the CICA Handbook.

"généralement," "d'habitude," "en général," and "habituellement." An extreme case is "reasonable assurance," which is translated into seven different French expressions in the CICA and international standards.

Similarly, the same French expression is used for different English expressions. For example, "normally" and "ordinarily" are both translated as "normalement"; "reasonable assurance," "reasonable certainty," and "reasonably expected" all appear as "raisonnablement certain" in the French version of the international standards.

Readers familiar with both English and French will note from Table 1 that some grammatical transformations have been made in the translations. For example, the French modified adjective "raisonnablement certain" appears paired with the English modified nouns "reasonable assurance" and "reasonable certainty." Some grammatical transformations had to be eliminated from our analysis due to the difficulty in isolating the uncertainty expression in the French version. For example, IAS 12.44 transforms the English modified noun "reasonable expectation" into the French active voice "il est raisonnable de s'attendre à"; IAS 2.21 presents the English adverbs "entirely or substantially" as the French nouns "la totalité ou une partie importante."

Two possible reasons for these translation inconsistencies are differences in the personal characteristics and preferences of the translators and the consideration of context-specific meanings. Both of these possible explanations are related to the "Sapir-Whorf" hypothesis. Psycholinguistic researchers have hypothesized that

characteristics of languages may influence how people think and react, which is the opposite to the more obvious theory that language results from our thought processes.¹⁹ Languages differ in the range and use of words and in grammatical construction. Our thought processes include both the choice of words to describe a specific phenomenon and the actions that may result from the cognitive processing. The implication of this theory is that the idiosyncrasies of a specific language that an accountant is using may influence his or her thought processes and subsequent actions. This possibility makes the job of a translator extremely difficult as translators would have to be fully knowledgeable of the languages involved and the possible cognitive and behavioral effects on individuals using both languages. However, the learning of a second language appears to affect the cognitive processes of subjects as bilingual subjects have been shown to exhibit cognitive differences when compared to unilingual subjects.²⁰ The implication of this finding is that perfect translation may not be achievable.

The present study was not intended to determine if the Sapir-Whorf hypothesis is accurate or why translation differences have occurred. However, our findings may provide data that may be useful in minimizing differences that result from the translation process.

Description of Subjects and Empirical Test

The anglophone and francophone experimental subjects respectively were from two unilingual English and French universities in Canada. One group consisted of senior undergraduate accounting students, the other consisted of students in a chartered

Table 2. Description of subjects

| | | English university | French university |
|--|-------------------------------------|--------------------|-------------------|
| Number: | Male | 42 | 42 |
| | Female | <u>32</u> | <u>54</u> |
| | Total | <u>74</u> | <u>96</u> |
| Native language: | English | 61 | 1 |
| | French | 3 | 95 |
| | Other | <u>10</u> | <u>0</u> |
| | Total | <u>74</u> | <u>96</u> |
| Age: | Mean | 23.7 | 24.1 |
| | Range | 19-34 | 21-52 |
| Major subject: | Accounting | 71 | 93 |
| | Other | 3 | 3 |
| Year | Final year of undergraduate program | 71 | 86 |
| | Other | 3 | 10 |
| | | | |
| Intends to become: | CA | 56 | 96 |
| | CMA | 12 | 2 |
| | CGA | 3 | 2 |
| Has taken or is taking a UFE coaching class | | 5 | 96 |
| Already has obtained an undergraduate degree | | 8 | 68 |

accountancy uniform final exam coaching class. The researchers are faculty members in these universities. Descriptive details of the two groups of subjects are contained in Table 2.

Both researchers speak English as their first language and the researcher at the anglophone university has a working knowledge of French. The basic questionnaire was written jointly in English, then translated (except that the exact English and French words used in the standards were maintained) into French by the researcher at the francophone university. The French translation was checked for consistency with the English version by colleagues whose first language is French. The Appendix includes examples of the questionnaires used in each language. The first part of each questionnaire asked subjects to provide probability numbers for the equivalent uncertainty expressions documented in Table 1, which were presented in the same random order in each language. The second part of each questionnaire requested demographic data.

Hypotheses and Results

The hypotheses tested in this study relate to the equality of the means and standard deviations of the English and French probabilities associated with each uncertainty expression.

H1: The means of the equivalent uncertainty expressions used in the English and French versions of the international accounting standards are the same.

H2: The standard deviations of the equivalent uncertainty expressions used in the English and French versions of the international accounting standards are the same.

Results of the association of probability numbers with the 27 pairs of uncertainty expressions in the international standards are summarized in Table 3. These results are based on the response by native speakers in each language.

Table 3 shows the means, standard deviations, and medians of responses. Many of the expressions have fairly large standard deviations relative to their means, which indicates a lack of consensus on the meaning of the expressions among language compatriots. Eighteen of the 27 standard deviations of the French expressions are higher than those of their English counterparts, with the notable exceptions of the high-probability expressions “quasi-absolu” and “quasi-certitude.” This indicates that the French expressions appear to be less precise than the English expressions.

The medians are also presented in Table 3 as an indication of the symmetry of the distributions of responses. The low-probability expressions (“remote,” “remote possibility,” “très peu probable,” “fort peu probable,” “possibilité minime,” and especially “risque minime”) are characterized by some skewness as evidenced by the disparity between their means and medians. This is less pronounced, however, in the very high-probability expressions such as “beyond any reasonable doubt,” “virtual certainty,” “certitude,” “quasi-absolu,” and “quasi-certitude.” Some other expressions with substantial differences between their mean and median include “très probable” and “susceptible.”

Table 3. Probability numbers associated with uncertainty expressions: means, standard deviations, and medians

| English (n = 61) | | | | French equivalent (n = 95) | | | |
|-----------------------------|------|--------|------|--------------------------------|------|--------|-----------------|
| Expression | Mean | (s.d.) | Med. | Expression | Mean | (s.d.) | Med. |
| always | 94.6 | (7.7) | 99 | toujours | 97.2 | (10.4) | 99 [#] |
| beyond any reasonable doubt | 85.7 | (23.3) | 90 | quasi-absolu | 93.3 | (6.6) | 95***# |
| certainty | 86.5 | (17.4) | 90 | certitude | 91.7 | (13.1) | 98** |
| frequently | 64.9 | (14.8) | 70 | souvent | 75.0 | (10.1) | 75***## |
| generally | 63.3 | (15.3) | 60 | généralement | 73.3 | (14.1) | 75*** |
| likely | 69.3 | (13.1) | 70 | susceptible | 54.5 | (21.9) | 60***## |
| normally | 67.4 | (10.5) | 70 | habuellement | 74.9 | (14.7) | 75***## |
| normally | 67.4 | (10.5) | 70 | normalement | 71.8 | (13.6) | 75** |
| normally | 67.4 | (10.5) | 70 | en général | 72.3 | (12.1) | 75** |
| often | 73.3 | (10.5) | 75 | souvent | 75.0 | (10.1) | 75 |
| ordinarily | 66.8 | (13.2) | 70 | normalement | 71.8 | (13.6) | 75* |
| probable | 69.3 | (13.1) | 70 | très probable | 83.9 | (14.8) | 90*** |
| probable | 69.3 | (13.1) | 70 | probable | 71.9 | (16.0) | 75 |
| reasonable assurance | 73.4 | (12.1) | 75 | raisonnablement certain | 76.8 | (17.7) | 80## |
| reasonable certainty | 69.5 | (13.2) | 70 | raisonnablement certain | 76.8 | (17.7) | 80** |
| reasonably certain | 72.5 | (11.4) | 75 | degré raisonnable de certitude | 81.9 | (13.9) | 85*** |
| reasonably certain | 72.5 | (11.4) | 75 | pratiquement assuré | 91.0 | (7.6) | 91***## |
| remote | 15.9 | (12.7) | 10 | fort peu probable | 16.2 | (22.9) | 10## |
| remote | 15.9 | (12.7) | 10 | très peu probable | 18.2 | (22.4) | 10## |
| remote possibility | 18.1 | (22.7) | 10 | possibilité minime | 16.3 | (22.6) | 10 |
| remote possibility | 18.1 | (22.7) | 10 | risque minime | 26.6 | (33.9) | 10## |
| sometimes | 39.2 | (14.8) | 40 | parfois | 40.6 | (19.8) | 40# |
| usually | 70.7 | (13.7) | 70 | généralement | 73.3 | (14.1) | 75 |
| usually | 70.7 | (13.7) | 70 | d'habitude | 72.8 | (14.1) | 75 |
| usually | 70.7 | (13.7) | 70 | en général | 72.6 | (12.1) | 75 |
| usually | 70.7 | (13.7) | 70 | habuellement | 74.9 | (14.7) | 75 |
| virtual certainty | 89.0 | (10.3) | 90 | quasi-certitude | 89.3 | (9.9) | 90 |

^{*} Indicates the means are different at the 0.05 level.^{**} Indicates the means are different at the 0.01 level.^{***} Indicates the means are different at the 0.001 level.[#] Indicates the variances are different at the 0.05 level.^{##} Indicates the variances are different at the 0.01 level.^{##} Indicates the variances are different at the 0.001 level.

Two-tailed *t*-tests were used to calculate the significance of the differences between the means in a test of H1. For 13 of the 27 pairs, there is a significant difference between the means of the responses associated with the English and French expressions at the 5% level. It cannot be concluded that the translations have succeeded in conveying an identical probability level in the two languages. However, these tests indicate only that the differences in the interpretation of the expressions are statistically significant and thus only identify necessary (but not sufficient) conditions for inconsistencies in accounting disclosure.

The relative sizes of the variances of the responses was used to test for consensus as a test of H2. The significance of the differences between the sizes of the variances of the two sets of subjects was calculated by the *F*-test for equal variances.²¹ The

variance of 14 of the 27 pairs of expressions are significantly different at the 5% level. This result indicates that the consensuses of the meanings of the equivalent translated expressions are not the same. The English expressions generally convey a more precise meaning than the equivalent French expressions, as indicated by the lower standard deviations of the responses, especially if the smaller sample size of the English respondents is considered. Results for both these tests are indicated in Table 3.

Davidson²² argued that four groups of factors affect professional judgment with respect to uncertainty assessment: (1) context, (2) method used to communicate the information to the decision maker, (3) differences in individual attributes such as personality, intelligence, age, sex, education, training, and experience, and (4) cognitive limitations of decision makers. Of these four groups of factors, only differences in individual attributes should be a significant factor in the present study, as the uncertainty expressions have been presented with no context, identical questionnaires were used to gather the information, and subjects were able to respond to this cognitive task with no significant difficulties.

In an attempt to explain differences in the interpretation of the uncertainty expressions by the subjects, regressions were run with the probability numbers pooled across English and French expressions as the dependent variable and the demographic data (including language) appearing in Table 2 as the set of independent variables. These independent variables were all represented by indicator variables except for the continuous age variable. The regression equation was formulated as:

$$\begin{aligned} \text{Prob}_{ij} = & A_{1j} + A_{2j} * \text{Year}_i + A_{3j} * \text{Major}_i + A_{4j} * \text{Age}_i + A_{5j} * \text{Sex}_i + \\ & A_{6j} * \text{Language}_i + A_{7j} * \text{CA}_i + A_{8j} * \text{Course}_i + A_{9j} * \text{CMA}_i + A_{10j} * \text{CGA}_i \\ & + A_{11j} * \text{Degree}_i + A_{12j} * \text{Year}_i + e_i \end{aligned}$$

The *F*-test of the overall explanatory power of these regressions was significant at the 5% level in five of the 18 expression pairs tested. These were "likely" and "susceptible," "normally" and "normalement," "ordinarily" and "normalement," "probable" and "probable," and "virtual certainty" and "quasi-certitude." Individual independent variables which were significant in these and other regressions were: age, year of studies, and taking or having taken a coaching course for the Uniform Final Exam (UFE) that all aspiring chartered accountants (CA) in Canada must write (in two of 18 pairs each); and language, intention to become a CA, and intention to become a certified management accountant (CMA) (in one of 18 pairs each). It is interesting that language was significant only once, but this may be due to its collinearity with other independent variables, in particular the UFE coaching course variable. Thus individual differences are related to differences in responses in some of the word pairs.

Summary and Conclusions

The purpose of this paper is to examine the consistency of the probability levels implied by uncertainty expressions used in international accounting standards issued

in English and French versions in Canada. Findings can be summarized as the following:

- (1) Grammatical differences occur in the translations that may or may not affect the concepts conveyed by the standards.
- (2) Uncertainty expressions appearing in various standards identical in one language are not always translated consistently in the other language. This was true for both languages as the variations were found in both directions.
- (3) Many of the translated uncertainty expressions do not convey the same probability levels in English and French.
- (4) Many of the translated uncertainty expressions do not have the same level of consensus in English and French, with the consensus being higher with the English expressions. A possible explanation for this finding may be consistent with the Sapir-Whorf hypothesis. We experienced difficulty in isolating some of the uncertainty expressions in the French version (mentioned above). This may indicate that the meanings assigned to French words are more dependent on their context than is true of English words. If this is true, then French speakers would have more difficulty assigning probability levels to uncertainty expressions without the assistance of a specific context.
- (5) A final observation concerns subjects who indicate their native language was neither English nor French and who were excluded from the results reported. Preliminary analysis of their responses to the English version of the text indicates that they had mean responses that appear to be quite different from the native English speakers and the variances of their responses were larger. These results are not reported due to the small number of subjects involved. However, in an international context, this finding could be quite important if accountants are working in and preparing financial statements in other than their native language.

It is possible that the interpretation of uncertainty expressions is influenced by the context in which the particular uncertainty expression is used. A possible extension to this research will be to add excerpts from the accounting standards in which the uncertainty expressions appear in order to test for an increase in the consensus of the levels and precisions of the responses. In addition, as many expression pairs appear in more than one context, this would provide a test of overall context effects.

Another possible reason for the lack of consensus is the use of student subjects, who do not have as refined a sense of professional judgment as do practitioners. Past research on the meanings of uncertainty expressions²³ found that the dispersion of the responses of accountants in public practice was smaller than those of accounting students. Thus another possible extension of this research will be to compare responses of professionals with those of accounting students.

These findings indicate that the *translation process* may be introducing inconsistencies in the concepts contained in accounting standards. Translated uncertainty expressions used in English and French do not convey the same probability levels. Less agreement exists on the probability levels conveyed by the French expressions. As a final caveat, however, the findings that uncertainty expressions are interpreted inconsistently as a result of the translation process do not automatically

indicate that inconsistent accounting treatments have occurred in different languages. Whether inconsistent financial statements occur is yet to be demonstrated.

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Appendix Part 1: English Version of Questionnaire

Uncertainty and accounting standards

Listed below are some common words or phrases that are used to express degrees of certainty or uncertainty. Beside each item please write the probability number (from 0.00 to 1.00) which most clearly reflects the degree of probability implied by each word or phrase. 0.00 indicates the lowest probability, and 1.00 indicates the highest.

| | | | |
|------------------------|-------|-----------------------------|-------|
| absolute assurance | _____ | reasonable assurance | _____ |
| reasonable certainty | _____ | never | _____ |
| frequently | _____ | sometimes | _____ |
| unlikely | _____ | uncertain | _____ |
| always | _____ | beyond any reasonable doubt | _____ |
| remote possibility | _____ | probable | _____ |
| high chance | _____ | reasonable possibility | _____ |
| reasonable expectation | _____ | usually | _____ |
| certainty | _____ | virtual certainty | _____ |
| generally | _____ | worthy of belief | _____ |
| unusual | _____ | likely | _____ |
| not probable | _____ | reasonably regarded as | _____ |
| slight chance | _____ | assured | _____ |
| reasonably assured | _____ | | |
| occasionally | _____ | | |
| rare | _____ | | |
| ordinarily | _____ | | |
| not likely | _____ | | |
| plausible | _____ | | |
| reasonably certain | _____ | | |
| in most cases | _____ | | |
| possible | _____ | | |
| normally | _____ | | |
| often | _____ | | |
| remote | _____ | | |

Appendix 1: *continued.*

Demographic characteristics of sample respondents may be useful to classify responses. Therefore we ask that you answer the following questions. Your answers will be kept strictly confidential and cannot be used to identify you.

1. Your current year of university studies (check one response):

1st year undergraduate
 2nd year undergraduate
 3rd year undergraduate
 4th year undergraduate
 master's studies

2. Your major subject (check one response):

Accounting
 Finance
 Another business administration field
 Non-business administration field

3. Age: _____

4. Sex: M F

5. Native language: English French Other

6. Do you intend to become a chartered accountant?

YES NO

7. Are you taking or have you taken any special courses to prepare you for the uniform final exam of the CICA?

YES NO

8. Do you intend to become a certified management accountant?

YES NO

9. Do you intend to become a certified general accountant?

YES NO

10. Do you have an undergraduate degree? YES NO

11. If yes, in what year did you graduate? _____

Appendix Part 2: French Version of Questionnaire

Incertitude et des normes comptables

Les mots et expressions qui suivent sont utilisés pour exprimer des degrés de certitude ou d'incertitude. A côté de chaque expression, indiquez la probabilité (entre 0,00 et 1,00) qui reflète le plus clairement le degré de possibilité impliqué par chaque mot et expression. 0,00 indique la probabilité la plus faible, 1,00 indique la probabilité la plus élevée.

| | | | |
|-------------------------|-------|--------------------------|-------|
| certitude absolue | _____ | assez bonnes chances | _____ |
| raisonnablement certain | _____ | vraisemblablement sûr | _____ |
| souvent | _____ | dégré raisonnable de | _____ |
| tout à fait improbable | _____ | certitude | _____ |
| toujours | _____ | jamais | _____ |
| risque minime | _____ | hypothétique | _____ |
| chance élevée | _____ | quasi-absolu | _____ |
| suffisamment sûr | _____ | très probable | _____ |
| certitude | _____ | bonnes raisons de croire | _____ |
| généralement | _____ | d'habitude | _____ |
| inhabituel | _____ | quasi-certitude | _____ |
| improbable | _____ | digne de foi | _____ |
| chance faible | _____ | probable | _____ |
| pratiquement assuré | _____ | fréquemment | _____ |
| parfois | _____ | certitude raisonnable | _____ |
| rare | _____ | habituellement | _____ |
| normalement | _____ | possible | _____ |
| peu probable | _____ | en général | _____ |
| plausible | _____ | très peu probable | _____ |
| la plupart du temps | _____ | assuré vraisemblablement | _____ |
| susceptible | _____ | incertain | _____ |
| d'ordinaire | _____ | possibilité minime | _____ |
| fort peu probable | _____ | raisonnablement sûr | _____ |
| pratiquement certain | _____ | vraisemblable | _____ |
| tout à fait possible | _____ | dans le plupart des cas | _____ |

Appendix 2. *continued.*

Des caractéristiques démographiques des répondants qui constituent un échantillon peuvent être utilisées pour classer les résultats. Donc nous vous prions de répondre aux questions suivantes. Toutes les réponses resteront strictement confidentielles et ne peuvent être utilisées pour vous identifier.

1. Votre année actuelle à l'université (cochez une réponse):
 1re année du premier cycle
 2me année du premier cycle
 3me année du premier cycle
 deuxième cycle
2. Votre domaine principal d'études (cochez une réponse):
 comptabilité
 finance
 un autre domaine en administration des affaires
 un domaine au dehors de l'administration des affaires
3. Age: _____
4. Sexe: M F
5. Langue maternelle: Français Anglais Autre
6. Avez-vous l'intention de devenir comptable agréé?
 OUI NON
7. Avez-vous suivi ou suivez-vous actuellement des cours au cadre du programme de licence en science comptables?
 OUI NON
8. Quelle version du manuel de l'I.C.C.A. utilisez-vous habituellement?
 Français Anglais
9. Avez-vous l'intention de devenir comptable en management accredité?
 OUI NON
10. Avez-vous l'intention de devenir comptable en gestion accredité?
 OUI NON
11. Avez-vous déjà obtenu un diplôme du premier cycle?
 OUI NON
12. Si oui, en quelle année? _____

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The Comparative Influence of Culture on Budget Control Practices in the United States and Japan

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Key words: National culture; Budget control systems; Budget control practices

Abstract: *This study attempts to determine whether national culture has an impact on budget control practices in the United States and Japan. The study hypothesized the influence of culture on six aspects of budget control practices in the United States and Japan. Results of the study disclose that the cultural dimension of individualism-collectivism appeared to explain why the US companies compared with the Japanese companies tend to use communication and coordination more extensively, build budget slack to a greater extent, seek more controllability of budgets, and use long-term performance evaluation to a lesser extent. Another main finding of this study is that the cultural dimension of uncertainty avoidance failed to explain different practices between the two countries in two areas: long-range versus short-range planning and the structuring of budgetary processes.*

Only a few empirical studies (Hawkins, 1983; Daley et al., 1985; Asada, 1989a, 1989b) of the US and the Japanese budget control practices have been attempted to date, and none of them took a cultural view towards their studies. Comparison of inter-country management practices could not be meaningful without considering the culture variable. That explains why so many cultural empirical studies (Tracy and Azumi, 1976; Lincoln et al., 1978; Pascale, 1978; Negandhi and Balliga, 1979; Pascale and Maguire, 1980; Hawkins, 1983; Daley et al., 1985; Kagano et al., 1985; Lincoln and Kalleberg, 1985; Luthans et al., 1985; Monden et al., 1985; Naoi and Schooler, 1985; Schwind and Peterson, 1985; England and Misumi, 1986; Lincoln et al., 1986; Sullivan and Nonaka, 1986; Sullivan and Suzuki, 1986; Omens et al., 1987; Birnberg and Snodgrass, 1988; Near, 1989) have been conducted in the management area.

The budget control system is a basic and substantive part of the organization's management control system. Although both US and Japanese firms practice budget control extensively, it is not known whether they practice it differently or whether their different practices, if in fact, they exist, can be attributed to their national cultural differences. This study is a cross-cultural empirical study that attempts to compare and discuss the relationship between national culture and budget control practices. The comparison investigates the degree and extent of cultural impact on budget control practices with respect to the United States and Japan.

The manuscript is organized in four parts. The first part is an introduction of the problem. The second is devoted to explanations of two key concepts underlying this empirical investigation: "budget control systems", and "culture", and to the justifications of selecting the United States and Japan for this study. The linkage between culture and management practice in budget control systems is developed into a set of hypotheses in the third part. Research methods and results of analyses are presented in the fourth and fifth parts. The manuscript ends with a summary of findings and limitations of the study.

Concepts of Culture and Budget Control Systems

"Culture" and "budget control systems" are two main concepts used in the above section without definition and explanation. In this section, we attempt to define and explain these two concepts, thereby developing a foundation for developing some theory to explain the influence of culture on budget control practices by management.

Culture

According to Hofstede (1980), culture is defined as the collective mental programming of people who live in a particular society. Culture provides the cognitive premises for individuals within a group and sets preconditions for human behavior. It consists of a variety of elements: beliefs, attitude, values, and norms (Birnberg and Snodgrass, 1955). These elements of culture affect the behavior of people living within a given society and are reflected in the management control practices of that society.

The term "beliefs" in the context of this study refers to an item of information of budget control systems that a manager tends to accept as true. This information influences the manager's attitudes toward specific aspects of budget control systems in a positive or negative direction. The term "attitude" refers to the manager's predisposition concerning budget control systems, that is, liking or disliking various aspects of the systems. The term "values" refers to the Manager's judgment toward what is considered correct, desirable, or preferable (Zavalloni, 1980). The term "norm" refers to socially shared values or standards, reflected in the extent to which specific behavior is considered socially acceptable (Wagner and Moch, 1986).

Culture is a socially transmitted heritage specific to a particular human society. A capacity for absorbing culture is innate in human beings, but a particular culture is not biologically inheritable. Thus, the essential feature of culture is social learning: the nongenetic transfer, within a society, of patterns of beliefs, attitude, values, and norms from individual to individual (Boyd and Richerson, 1985). In other words, people acquire their beliefs, attitude, values, and norms on the basis of their life experience.

Hofstede's Four Cultural Dimensions

Hofstede examined work-related values, obtaining responses from members of one multinational company operating in 50 different countries across two points in time (approximately 1968 and 1972), and empirically established the cultural differences on four organizationally relevant dimensions: power distance, uncertainty avoidance, individualism–collectivism, and masculinity–femininity. These four cultural dimensions are briefly elaborated.

Power distance refers to the degree to which a society accepts a hierarchical or unequal distribution of power in an organization. It represents inequality that is defined by people at the lower levels and it implies that a society's level of inequality is endorsed by its followers as much as by its leaders (Hofstede, 1990). *Uncertainty avoidance* refers to the extent to which a society tends to consider itself threatened by the uncertainty of the future and by ambiguous situations. It identifies the extent to which members in a particular culture feel either uncomfortable or comfortable in unstructured situations. Unstructured situations are defined as novel, unknown, surprising, or different from the usual (Hofstede, 1980).

Individualism–collectivism refers to the extent to which an individual is an active agent in pursuing his or her own goals as opposed to being dependent on the organization and its other members (Hofstede, 1980; Sekaran and Snodgrass, 1986). *Masculinity–femininity* refers to the degree to which a society attributes such stereotyped masculine traits as assertiveness, competition, recognition, and acquisition of money as dominant values to be cherished. Femininity relates to the extent which feminine traits, such as nurturing, empathy, cooperation, and a good quality of life, are valued in a society (Hofstede, 1980).

Although Hofstede identified four dimensions of culture relevant to organizations, no researcher has, thus far, provided a clear indication of the specific influence of each cultural dimensions on budget control systems. It must be noted that Hofstede (1983) has identified two more cultural dimensions in his more recent study; since these two dimensions have no impact on this study, they are not explained here.

Budget Control Systems

Budget control systems in this study include both the development and implementation of budgets. A budget is defined as a plan expressed in quantitative, usually monetary, terms which covers a specific period of time (Lang, et al., 1953; Anthony, 1965; Koontz and Wehrich, 1988; Anthony et al., 1989). The development of budgets is a

process of quantifying management's plans and is generally referred to as the budgeting process. The implementation of budgets is the process of controlling operation in accordance with budgets and is generally understood as the budgetary control process.

In the present study, budget control systems are defined as a systematic and formalized approach to performing significant phases of the budgetary planning and control functions. A budget control system in this study involves (1) the development and application of objectives for the organization; (2) the specification of organizational goals; (3) a profit plan developed in broad time horizons; (4) a short-range profit plan detailed by assigned responsibilities (divisions, products, or projects); (5) periodic performance reports detailed by assigned responsibilities; and (6) follow-up procedures (Welsch et. al., 1988). This budgeting and budgetary control process, according to Horngren (1991), may be summarized in three major functions: (1) promoting communication and coordination among various segments of the company; (2) compelling management planning; and (3) providing performance evaluation criteria.

This study attempts to match meaningfully Hofstede's cultural dimensions with Horngren's three basic functions of budget control systems. The study will offer an explanation of how values placed by managers on specific cultural dimensions affect particular aspects of budget control practices, by focusing on the cultural dimensions in which the United States and Japan differ most.

Country Selection

Despite their similar economic structures, that is, advanced economies based on market mechanisms, the United States and Japan have their own distinctive cultures. This study selects the United States and Japan as research sites for this reason and for the fact that many researchers are interested in the management practices of the two countries.

A previous theme in studies of Japanese management describes large Japanese companies to be homogeneous societies with strong cultural traditions (Ouchi, 1981; Torrence, 1984; Takanaka, 1986). Extraordinary commitment, identification, and loyalty shown by employees to their companies are described as integral features facilitating Japanese management. Japanese place their value on the subordination of the individual to the group and stress the importance of harmony. Cultural traditions of duty, obedience, and discipline have strongly favored the paternalistic clan form of management in large organizations in Japan (Hazama, 1971; Iwata, 1977; Ouchi, 1981). Workers are considered to be worthy and capable members of the "corporate family" which provides its members with protection and security in the form of lifetime employment in these large companies.

Companies in the United States have been operating in a totally different culture. The United States is described as a heterogeneous, multi-religious, nonconforming, and litigious society (Torrence, 1984). Under the US cultural traditions, the moral imperatives are ambition, maximizing one's opportunities, and fully utilizing one's capabilities. Dependency, security orientation, and allowing others to solve one's problems are viewed as a sign of weakness and a lack of ambition. Americans prefer more an instrumental connection to the company and do not view the company as an extended family. US managers, therefore, do not favor paternalism and consider

Table 1. Indices and ranks for the United States and Japan

| | United States | | Japan | |
|-----------------------|---------------|------|-------|-------|
| | Index | Rank | Index | Rank |
| Power distance | 40 | 16 | 54 | 21 |
| Uncertainty avoidance | 46 | 11 | 92 | 44 |
| Individualism | 91 | 50 | 46 | 28-29 |
| Masculinity | 62 | 36 | 95 | 50 |

excessive non-business involvements as an invasion of privacy of the individual (Schein, 1981).

The best way to summarize the cultural differences between the United States and Japan is to compare the the scores for the four dimensions discovered by Hofstede. Hofstede developed a score (index) to represent each of the four cultural dimensions for each of the fifty countries he studied. The indices and ranks for the U.S. and Japan are presented in Table 1.

A comparison of the scores in Table 1 would lead to the conclusion that there are substantial cultural differences between the United States and Japan with regard to the dimensions of uncertainty avoidance, individualism–collectivism, and masculinity and that it would be enlightening to compare the US and the Japanese management practices on budget control systems from the cultural perspective.

Development of Hypotheses

The cultural dimensions of uncertainty avoidance and individualism–collectivism serve as the variables to explain the management practices on budget control systems in the United States and Japan. The two nations scores on these two dimensions, as shown above, indicate that the Japanese tend to view themselves in collectivistic rather than individualistic terms and also exhibit a high tendency to avoid uncertainty. In contrast, Americans tend to be individualistic and have a relatively low need to avoid uncertainty.

Communication and Coordination

The modes of communication and coordination influence the ways in which the manager's behavior interacts with the budget control system. Communication is defined as the transfer of information from one person to another with the information being understood by both the sender and the receiver. It is, therefore, the means by which organized activities are unified, behavior is modified, change is effected, information is made productive, and goals are achieved (Koontz and Weihrich, 1988; Welsch et al., 1988). Coordination is defined as the process of integrating individual and group efforts toward the accomplishment of group goals. It reconciles differences in approach, timing, effort, or interest.

The cultural heritage of society is likely to influence the modes of communication and coordination in a society. In a collectivistic society, organizational policies and

practices are established and expected to be followed by members out of their sense of loyalty and duty to the system. Because employees already have in mind a view of the organization and work together, managers in such a society do not need to spend much time and effort in ensuring that the goals of the organization are achieved.

In an individualistic society, managers seek their own self-interest (Sekaran and Snodgrass, 1986) and are eager to maximize their own opportunities for advancement. Individuals in such a society are active agents themselves and are more independent from their organizations (Hofstede, 1983). Managers, therefore, have a greater need for full disclosure both to clarify the situation and to assure that everyone explicitly understands the organization's goals and his/her role. In other words, managers in an individualistic society must use formal communication and coordination in budgetary processes to a greater extent than managers in a collectivistic society. Formal communication and coordination in this study are those that occur through the organizational structure to facilitate the achievement of organizational goals.

Within the Japanese collectivistic society, there is a strong sense of harmony, human order, and hierarchy. The need to maintain harmony and to avoid distinction is the obligation of each individual when he or she interacts with others. Such a cultural climate in Japan may discourage formal discussions and direct confrontations. The practice, such as "nemawashi" which exchanges information in advance of formal meeting and minimizes conflicts in opinions at the meeting, is a product of the cultural climate.

Being individualistic, Americans see themselves as distinct entities, separated from all others with separate beliefs, talents, and experiences (Pascale and Athos, 1981) Such an individualistic characteristic makes group cooperation and accomplishment difficult as Indicated by Kelley et al. (1987). US companies, therefore, may have a greater need for formal communication and coordination to remove the impediment of conflicting individual goals.

Thus, based on the cultural dimension of individualism–collectivism, the following hypothesis is formulated for this study:

H1: US companies use formal communication and coordination in budget planning processes to a greater extent than Japanese companies.

Planning

Planning helps people cope with uncertainty as to the future because it bridges the gap from where they are to where they want to be in the future. People in a high uncertainty avoidance society prefer more ritual to reduce the level of their anxiety (Hofstede 1980). Since planning is an organizational ritual which serves to reduce ambiguity in face of uncertainty, organizations tend to take a long-range perspective towards planning.

Budgetary time horizon refers to the time frame for budget plans. Most companies prepare budgets once a year, and some companies follow the practice of preparing a revised budget every quarter (a rolling budget). Other companies, in addition to annual budgets, have long-range budgets covering a period of three, five, or even more years.

In a high uncertainty avoidance society, budgets serve, among other things, to act as an agent to reduce the anxiety of managers over a long period of time. Thus managers in a high uncertainty avoidance society would tend to spend much time and effort in formulating long-range budgets that cover broad time horizons in addition to having budgets that cover a year or less.

Japanese managers, being high on uncertainty avoidance, tend to resort to the uncertainty reduction mode and build budgets from broad time horizons in order to reduce their anxiety of the future. In contrast, US managers, with a low score on the uncertainty avoidance index, would not feel as much anxiety or uncertainty of the future as Japanese managers. Therefore, it may be suggested that US managers would be less motivated to formulate budgets that cover broad time horizons in comparison to their Japanese counterparts.

Such a suggestion was echoed by some researchers. Hawkins (1983) reported that long-range planning was used by more Japanese than US companies. According to Daley et al. (1988), Japanese Managers and controllers had a stronger preference for long-range planning compared to their US counterparts.

Thus, based on the uncertainty avoidance dimension, the following hypothesis is formulated:

H2: Japanese companies use broad time horizons in budget planning processes to a greater extent than in the US companies.

Uncertainty avoidance has also an impact on structuring of budgetary processes. Structuring of Budgetary processes refers to the extent to which procedures and rules are considered to be important for formulating budgets. According to Hofstede (1980), an organization reduces internal uncertainty – caused by the unpredictability of behavior of its members and stakeholders – by setting rules and procedures; that is, managers would structure the management processes to assure that subordinates will act in a way most likely to achieve their goals

Managers in a high uncertainty avoidance society feel high stress in unstructured situations and, therefore, attempt to eliminate or reduce the unpredictability of the behavior of their subordinates by setting procedures and rules. In budgetary processes, they would prepare and follow budget manuals to a great extent In order to reduce the level of their anxiety. Managers in a low uncertainty avoidance society, in contrast, feel less stress in unstructured situations and, therefore, attempt to structure the budgetary policies and processes to a lesser degree, preferring more flexibility in the budgetary planning processes.

Since Japan is higher in uncertainty avoidance, Japanese managers would very much dislike internal uncertainty and structure their budgetary processes more in opposition to managers in the United States. This speculation leads to the following hypothesis:

H3: Japanese companies structure budget planning processes to a greater extent than US companies.

Individualism–collectivism and uncertainty avoidance have an impact on budget slack building. Budget slack can be defined as a deliberately created difference between the correct budget estimate and the submitted budget estimates which are

padded. Lukka (1988) categorized basic deviations between the budget and the actual result as (1) estimation error, (2) budget slack, and (3) true inefficiency and ineffectiveness. Budget slack, according to Welsch et al., (1988), is typically created by deliberately underestimating revenues, overestimating expenses and personnel requirements, and using standard costs that do not reflect expected performance improvements.

A number of factors influence the budget slack building, including types of individual goals, organizational norms, the degree of participation by employees, the reward structure, types of power factors, the profitability situation, as well as uncertainty (Lukka, 1988). Divisional managers are usually closer to the action and therefore know more about the local environment than the corporate managers. This information differentially motivates divisional managers to build budget slack (Magee, 1986). Budget slack often results from a basically circular phenomenon; that is, slack is built into the budget because the budget usually is reduced in the process of budget review, and the budget is reduced because slack has been built into the budget (Welsch et al., 1988).

At the individual level, Lukka (1988) distinguished two different intentions for building slack into budgets: resource intention and performance evaluation. According to Lukka, resource intention refers to an actor's aim of obtaining control of excessive resources; that is, having extra resources under his control is important to satisfy his self-esteem. Performance evaluation intention refers to the role of the budget as an evaluation criterion, and budget slack enables the manager to satisfy his safety needs.

In an individualistic society, performance evaluation is based on the achievements of the individual. Therefore, managers tend to create budget slack to be sure of accomplishing the budget targets and being evaluated positively. In contrast, performance evaluation in a collectivistic society is based on group achievements. In such a society, a flexible style of evaluation is used, with the budget being used in conjunction with other criteria, such as group performance. Managers in collectivistic cultures will tend to feel less pressure for personally meeting their budget goals and, therefore, should feel less compulsion for creating budget slack.

Since the United States has the highest score on the individualism index, managers in the United States, in comparison with their Japanese counterparts, should feel a greater need for building slack into budgets. The empirical research by Daley et al. (1985) reported that, compared to Japanese managers US managers had a higher tendency to create budget slack.

From the cultural perspective of individualism–collectivism, the following hypothesis is formulated:

H4: US companies build slack into budgets to a greater extent than Japanese companies.

Performance Evaluation

For control systems to work effectively, evaluation should be conducted in light of verifiable and objective goals, and controls should be tailored to positions. Few

budget items, however, are clearly under the sole control of one manager. Since managers may have varying degrees of control over their budget items a question arises as to how to account for their budgetary responsibility. Controllability of budgets refers to the extent to which managers within the management control systems should be charged or credited only for items within their control (McNally, 1980). To assure controllability of budgets, it is essential to personalize budget variances so that each variance is assigned to the person primarily responsible. Responsibility accounting systems identify various decision centers and trace performance to the individual who is primarily responsible for the actual results in question.

In an individualistic society, the expending of efforts should lead to intended results and evaluation, therefore, needs to be based on the real achievement of an individual. In other words, budget control systems can provide a valid basis for performance evaluation only when the systems are capable of measuring real accomplishments of the managers. This approach indicates that a manager in an individualistic society feels a greater need for being able to control his/her own budget. In contrast, in a collectivistic society, performance evaluation is based on group achievements. In such a society, managers feel less need for controllability of budgets.

With a very high score on the individualism index, the US companies would encourage competition among members of a group. Thus, successful employees can expect to receive a high share of the rewards (Sullivan and Suzuki, 1986). This cultural attribute indicates that US managers, in order to meet their budget targets, rely on controllability of budgets to a greater extent.

Conversely, the Japanese companies, with a relatively low value on individualism, would encourage competition between groups rather than among members in the group (Alston, 1986). In other words, meeting group goals is very important under the Japanese collectivistic culture, and successful employees working in groups can expect a high share of rewards (Sullivan and Suzuki, 1986). The Japanese do not give sole credit to a person in the spotlight (Pascale and Athos, 1981). Rewards are not tied strictly to individual performance and are used as an incentive for the individual to integrate himself or herself into the corporate whole. This cultural characteristic indicates that the degree of controllability of budgets is not great in Japanese companies.

Since the US society has a higher score on the individualism index than Japanese society, the following hypothesis is formulated based on the foregoing discussion:

H5: US companies practice controllability of budgets to a greater extent than Japanese companies.

Individualism–collectivism has an impact on performance evaluation time horizons. Evaluation time horizons refer to the evaluation of short-term versus long-term performance of managers as they relate to budgets. Many decisions, such as investment in facilities, employee training, and research and development, that managers make today influence a company's performance over a certain period of time, and the results of these decisions sometimes may not be reflected in the current performance evaluation. Conversely, current performance data may reflect in part the impact of events and decisions from a previous period (Anthony, 1965; Magee, 1986). These

phenomena raise a question as to what evaluation time horizons might be preferred by companies with different national cultural heritages.

In an individualistic society where evaluation is based on personal achievement, people tend to have a short-term view of their jobs and lack strong identification with their companies. Therefore, they prefer to be evaluated at shorter intervals and expect immediate rewards on the basis of their short-term efforts.

In a collectivistic society, where evaluation must appeal to individuals as a group (Sekaran and Snodgrass, 1986), people would behave in a manner which lead to the acquisition of collective outcomes that provide shared benefits (Wagner and Moch, 1986). They would not be keen on being evaluated at short intervals, but wait for a longer time period when group achievements can become evident. Thus companies in such a society would place greater emphasis on long-term results and use long-term measures to evaluate employees' performance.

Since the United States is reported to be the highest country on the individualism index, US companies would be extremely keen on short-term performance measures such as current profitability. In contrast, Japanese companies would use long-term performance measures to a greater extent since the country is reported to be collectivistic. Evaluation and rewards in Japan seem to be structured in a manner that is congruent with the company's long-run survival as the rewards are determined based on seniority (*nenko*) rather than merit (Ouchi, 1981). Thus, evaluation based solely on current period budget results may not be viewed favorably by Japanese managers.

Based on the foregoing discussion, the following hypothesis is formulated:

H6: Japanese companies use long time horizons for performance evaluation to a greater extent than US companies.

From the perspective of the two specific cultural dimensions on which the United States and Japan varied the most, six hypotheses were formulated as they relate to budget control practices. These hypotheses examine the cultural influence on three basic functions of budget control systems: one dealing with communication and coordination, three with planning, and two with performance evaluation.

Research Methods and Procedures

A total of 452 manufacturing companies (205 US and 247 Japanese companies) listed on the major stock exchanges in the United States and Japan with an annual sales over a certain specific volume formed the population for this study. In the United States, companies with a 1988 sales volume of over 1 billion US dollars and, in Japan, companies with a 1988 sales volume of over 100 billion yen (1 US dollar = 125.9 Japanese yen or December 31, 1988) provided the basis for the study. The corporate controller or the manager in charge of budgeting was the subject responsible for collecting data. The managers were asked to respond to 30 statements on 5-point Likert-type scales, ranging from "strongly disagree" to "strongly agree." After one month from the date of ending the first letter, a second letter with a copy of the questionnaire attached was sent to urge responses from those who had not returned

the questionnaire. A total of 219 responses were received, with a response rate of 48.5 percent. In the United States, 70 of the 205 companies responded; 53 responded immediately and 17 more after a follow-up mailing, resulting in a response rate of 34.1 percent. In Japan, 149 of the 247 companies responded; 112 responded immediately and 37 after a follow-up mailing, giving a response rate of 60.3 percent. A comparison of the second responses with the first ones disclosed insignificant differences, thereby signifying low non-response bias.

The questionnaire used for this study was developed to incorporate 30 items, measuring the six budget-related variables of communication and coordination, long-range planning, structuring of budgetary processes, budget slack, controllability of budgets, and short-term versus long-term performance. In developing the questionnaire, a number of previous works were drawn upon (Onsi, 1973; Bruns and Waterhouse, 1975; Milani, 1975; Swieringa and Moncur, 1975; Otley, 1978; Kenis, 1979; Hofstede, 1980; Merchant, 1981; Daley et al., 1985; Simon, 1987; Birnberg and Snodgrass, 1988).

The questionnaire used for the Japanese companies was translated from the English version by one of the authors whose nationality is Japanese. To assure the equivalence of measures, the translation back into English was done by Professor Ujin Shibata of Kanazawa College of Economics. The reverse-translation and the original were carefully compared and examined so that the US and Japanese versions reflected the same underlying ideas and meant the same thing to respondents of both countries.

To ensure its appropriateness and understandability, the questionnaire went through a series of pretests in both countries. After reviewing the results of the pretests, some of the items were reworded, others were eliminated, while a few items were added. Then the instrument was again pilot tested in Japan, contacting senior controllers of six large manufacturing companies located in the Hokuriku district and listed on the major stock exchanges. All six responses were received which indicated a need for some slight rewording. The questionnaire in English is presented in Appendix 1.

Statistical techniques that were employed for the purpose of data analyses included factor analysis, reliability test, and the *t*-test. Factor analysis was used to ascertain whether the theorized dimensions emerged. A familiar obstacle to cross-cultural survey research is that measures which support a particular hypothesis of underlying concepts in one country may fail to do so in another (Lincoln and Kalleberg, 1985). Thus it is essential to ensure conceptual equivalence of the measure (England and Harpaz, 1983; Sekaran, 1983; Adler, 1983; Hui and Triandis, 1985). Factor analysis is used to accomplish this purpose. The internal structure of the construct was examined for each of the variables by conducting a series of factor analyses on different combinations of items. The rationale is that, if a construct is the same across cultures, it should have the same item set and the same relations among items across cultures (Hui and Triandis, 1985). In order to test the hypotheses proposed earlier, *t*-tests were applied.

Results and Analysis

Results of Analysis are Presented in the three subsections below.

Results of Factor Analysis and Characteristics of the Variables

Factor analysis of the items measuring the variables were performed individually on both the US and Japanese samples to determine the components of an item set which would constitute the reliable measure for each of the six variables as described

Table 2. Results of factor analysis

Group 1: "Communication and coordination" versus "the importance of long-range planning" (maximum likelihood analysis, equamax)

| United States | | | Japan | | |
|---------------|----------|----------|-------|----------|----------|
| Items | Factor 1 | Factor 2 | Items | Factor 1 | Factor 2 |
| 9 | 0.8279 | -0.0589 | 10 | 0.7999 | 0.0988 |
| 10 | 0.6732 | 0.1232 | 9 | 0.6809 | 0.0241 |
| 6 | 0.5821 | 0.1133 | 7 | 0.5153 | 0.1553 |
| 7 | 0.4878 | 0.1502 | 8 | 0.4943 | 0.1860 |
| 8 | 0.3470 | 0.0832 | 6 | 0.4023 | 0.2776 |
| 2 | 0.0110 | 0.9277 | 4 | -0.0185 | 0.8622 |
| 4 | 0.0715 | 0.5696 | 3 | 0.1819 | 0.5232 |
| 3 | 0.1844 | 0.3813 | 2 | 0.1657 | 0.4157 |

Note: Items 2, 3, and 4 loaded on Factor 2 (Labeled "communication and coordination"), while items 6–10 loaded on Factor 1 (labeled "the importance of long-range planning").

Group 2: "Structuring of budgetary processes" versus budget slack" (maximum likelihood analysis, oblimin)

| United States | | | Japan | | |
|---------------|----------|----------|-------|----------|----------|
| Items | Factor 1 | Factor 2 | Items | Factor 1 | Factor 2 |
| 16 | 0.8644 | -0.1445 | 19 | 0.8218 | -0.1211 |
| 20 | 0.8193 | -0.0945 | 20 | 0.7298 | -0.1623 |
| 19 | 0.7888 | -0.1670 | 16 | 0.7273 | -0.1060 |
| 17 | 0.6171 | 0.0335 | 17 | 0.5957 | -0.1744 |
| 18 | 0.3614 | 0.0178 | 18 | 0.4750 | -0.1405 |
| 15 | -0.0866 | 0.8632 | 12 | -0.2103 | 0.8137 |
| 12 | -0.1785 | 0.8053 | 15 | -0.1073 | 0.6429 |
| 13 | 0.0459 | 0.7264 | 14 | -0.0906 | 0.6210 |
| 14 | 0.0415 | 0.6671 | 13 | -0.1028 | 0.5554 |
| 11 | -0.0997 | 0.5020 | 11 | -0.1957 | 0.5441 |

Note: Items 11–15 loaded on Factor 2 (labeled "structuring of budgetary processes"), while items 16–20 loaded on Factor 1 (labeled :budget slack").

Group 3: "Controllability of budgets" versus "short-term versus long-term performance" (principal components analysis, varimax)

| United States | | | Japan | | |
|---------------|----------|----------|-------|----------|----------|
| Items | Factor 1 | Factor 2 | Items | Factor 1 | Factor 2 |
| 28 | 0.8920 | -0.0654 | 26 | 0.8075 | 0.0740 |
| 26 | 0.8300 | 0.0652 | 28 | 0.7375 | 0.1434 |
| 29 | 0.7253 | 0.1754 | 29 | 0.7199 | 0.0140 |
| 23 | 0.1312 | 0.7310 | 23 | -0.0028 | 0.7636 |
| 21 | -0.2081 | 0.6201 | 22 | -0.0591 | 0.6552 |
| 22 | 0.2795 | 0.6191 | 21 | 0.4011 | 0.5472 |

Note: Items 21, 22, and 23 loaded on Factor 2 (labeled "controllability of budgets."), while items 26, 28, and 29 loaded on Factor 1 (labeled "short-term versus long-term performance").

below. In other words, factor analysis provided a basis for developing the additive measures.

Factor analysis was performed on 10 items at a time to evaluate the internal structure of the variables. It was decided to include no more than 10 times because of the sample size (United States = 70, Japan = 149). In the primary set of five variables, each consisting of five items, several combinations of 10 items with two primary variables at a time were factor-analyzed using both principal components and maximum likelihood analyses. Varimax, quartimax, oblimin, and equamax were used as rotation methods. The factor structure, as described below, remained relatively stable across all rotations. The final factor structures of the measures, identified through the process described below, are presented in Table 2.

For this first group in Table 2, when item sets were factor-analyzed using the maximum likelihood as the extraction method and equamax as the rotation method, items 6–10 loaded on Factor 1 in the two samples while items 2–4 loaded on Factor 2. The two factors accounted for 40.8 percent of the total variance for the US sample and 39.7 percent for the Japanese sample. This indicates that the latent structure of Factor 1 represented “the importance of long-range planning”, while the latent structure of Factor 2 represented “communication and coordination”. Thus, items 2–4 constituted the measure for “Communication and Coordination” (VI), and items 6–10 for “The importance of long-range planning” (V2).

For the second group in Table 2, when the item sets were factor-analyzed using the maximum likelihood extraction and oblimin rotation, items 16–20 cleanly loaded on Factor 1 in the two samples, while items 11–15 loaded on Factor 2. The two factors accounted for 52.4 percent of the total variance for the US sample and 44 percent for the Japanese sample. Based on this result, it is evident that “budget slack” and “structuring of budgetary processes” were represented by the latent structures of Factors 1 and 2, respectively. Thus, items 11–15 constituted the measure for “structuring of budgetary processes” (V3), and items 16–20 for “budget slack” (V4).

For the third group, 10 items represent “controllability of budgets” (V5) and “short-term versus long-term performance” (V6). When the principal components extraction method and varimax rotation were performed, items 26, 28, and 29 loaded cleanly on Factor 1 (short-term versus long-term performance) in the two samples, while items 21, 22, and 23 loaded on Factor 2 (controllability of budgets). The two factors accounted for 58.2 percent of the total variance for the US sample and 53.6 percent for the Japanese sample. The set of items 21–23 constituted the measure for “controllability of budgets”, and the set of items 26, 28, and 29 for “short-term versus long-term performance”.

Results of t-Test

The hypotheses proposed earlier were examined by performing *t*-tests at the .05 level of confidence. The results of the tests are summarized in Table 3 and discussed below.

The differences in the means of the two samples (United States and Japan) were significant in the hypothesized direction for four hypotheses, H1, H4, H5, and H6. Thus these four hypotheses were accepted. The other two, H2 and H3, were rejected.

Table 3. Results of *t*-test on budget control practices

| | Mean | SD | <i>t</i> -Value | Prob. |
|---|------|-------|-----------------|-------|
| Communication and coordination | | | | |
| United States | 4.03 | 0.758 | 3.26 | 0.001 |
| Japan | 3.70 | 0.647 | | |
| The importance of long-range planning | | | | |
| United States | 3.51 | 0.738 | -0.04 | 0.965 |
| Japan | 3.52 | 0.607 | | |
| Structuring of budgetary processes | | | | |
| United States | 2.95 | 0.852 | 0.39 | 0.700 |
| Japan | 2.90 | 0.621 | | |
| Budget slack | | | | |
| United States | 3.08 | 0.712 | 1.99 | 0.049 |
| Japan | 2.89 | 0.557 | | |
| Controllability of budgets | | | | |
| United States | 3.42 | 0.640 | 2.98 | 0.003 |
| Japan | 3.17 | 0.545 | | |
| Short-term versus long-term performance | | | | |
| United States | 2.80 | 0.780 | -2.99 | 0.003 |
| Japan | 3.11 | 0.544 | | |

The four accepted hypotheses were all explained by the cultural dimension of individualism–collectivism. Thus the individualism–collectivism dimension succeeded in explaining the following management practices:

1. US companies used formal communication and coordination in budget planning processes to a greater extent than Japanese companies.
2. US companies built slack into budget to a greater extent than Japanese companies.
3. US companies practiced controllability of budgets to a greater extent.
4. US companies used broad evaluation time horizons to a lesser extent than Japanese companies.

On the other hand, the cultural dimension of uncertainty avoidance failed in explaining H2 and H3, dealing with planning and structuring of budgetary processes.

Effects of Size on Budget Control Practices

A number of studies have considered the effects of the size and technology of the company, the manager's authority level, and the functional area in the organization (Pugh et al., 1969; Child, 1973; Tracy and Azumi, 1976; Lincoln and Kalleberg, 1990). Tracy and Azumi reported that many relationships linking these attributes were similar between Japanese and Western companies. Therefore, the attributes seem to have important implications for the present study.

Although we have discussed and focused upon the effects of culture on budget control practices by ignoring the effects of the sample attributes, size may provide another explanation of the results. As portrayed in Table 4, the results of the *t*-tests

Table 4. Descriptive statistics for size*Panel A: Sales volumes*

| | United States (N=49) | Japan (N=149) |
|-----------------|----------------------|-------------------|
| Means | 10 506 ^a | 3918 ^b |
| SD | 20 434 | 4517 |
| Range | 1006–123 642 | 1020–34 186 |
| <i>t</i> -Value | | 2.24 |
| <i>p</i> -Value | | 0.030 |

^aMillion US dollars.^b100 million Japanese Yen.*Panel B: Number of employees*

| | United States (N=49) | Japan (N=149) |
|-----------------|----------------------|---------------|
| Means | 61 896 | 7532 |
| SD | 119 585 | 9153 |
| Range | 1700–765 700 | 170–58 186 |
| <i>t</i> -Value | | 3.18 |
| <i>p</i> -Value | | 0.003 |

on company size reported significant mean differences between the US and Japanese samples with respect to both sales volume ($t = 2.24$, $p = 0.030$) and number of employees ($t = 3.18$, $p = 0.003$).

In order to obtain unbiased estimates of theoretically important effects, multiple regressions were performed including size as controls. Six additive measures and 30 questionnaire items constituted dependent variables in the regression equations. An equation was constructed using the same independent variables and methods for each of the dependent variables. The independent variables included cultural variable (dummy variable: United States = 1, Japan = 0) and two size variables (the natural logarithms of the sales volume and number of employees). As a variable selection method, “enter” was specified without a variable list.

As noted in Panel A of Table 5, the correlation between the sales volume and number of employees was 0.924 for the US sample, and 0.842 for the Japanese sample. The high correlations caused multicollinearity problems which would make the coefficient estimates of the size variables unreliable. Therefore, it was determined to drop one of the size variables (sales volume). For the purpose of this study, number of employees was retained as it was considered to be a better representation of company size. The regression results are shown in Panels B and C of Table 5.

The results of *F*-tests were used to evaluate the explanatory power of the estimated regression equations. As can be seen from Panels B and C, *F*-values were significant at the 0.05 level for the regression equations of V1, V5, and V6; and for the regression equations of items 1, 2, 4, 5, 8, 11, 14, 19, 20, 21, 22, 23, 24, 26, 27, 28, and 30, indicating that the variability in the dependent variable was explained well by each of these estimated equations.

As noted in Panel B of Table 5, signs of coefficient estimates of culture in all the equations at the variable level were congruent with the direction expected in each of the hypotheses. In addition, the coefficient estimate of culture was significant at the 0.05 level for the equation of V6 (short-term versus long-term performance). None

Table 5. Results of regression analysis of budget control practices on culture and number of employees*Panel A: Pearson correlation coefficients between sales volume and number of employees*

United States (N=49) Japan (N=149)

0.924 0.842
p=0.000 p=0.000*Panel B: Effects at the level of additive measures*

| | Standardized regression coefficients (beta) | Adjusted R ² | F-Value |
|-----------------|---|----------------------------|---------|
| | Culture (US=1, Japan=0) | Log of number of employees | |
| V1 ^b | 0.161 | 0.064 | 0.032 |
| V2 ^c | -0.051 | 0.109 | -0.003 |
| V3 ^d | -0.034 | 0.153 | 0.007 |
| V4 ^e | 0.097 | 0.024 | 0.002 |
| V5 ^f | 0.101 | 0.113 | 0.026 |
| V6 ^g | -0.286** | 0.012 | 0.067 |

Panel C: Effects at the level of questionnaire items

Standardized regression coefficients (beta) F-Value

| | Culture (US=1, Japan=0) | Log of number of employees ^a | |
|--------|-------------------------|---|-----------|
| Item 1 | 0.396*** | 0.065 | 21.516*** |
| 2 | 0.158 | 0.068 | 4.036* |
| 3 | -0.050 | 0.051 | 0.175 |
| 4 | 0.345*** | -0.065 | 9.546*** |
| 5 | 0.499*** | 0.080 | 39.499*** |
| 6 | 0.086 | 0.059 | 1.561 |
| 7 | -0.068 | 0.105 | 0.619 |
| 8 | -0.251** | 0.058 | 4.562* |
| 9 | 0.093 | 0.042 | 1.393 |
| 10 | -0.026 | 0.091 | 0.551 |
| 11 | 0.180* | 0.102 | 6.335** |
| 12 | -0.050 | 0.037 | 0.145 |
| 13 | 0.153 | 0.015 | 2.451 |
| 14 | -0.297** | 0.140 | 5.386** |
| 15 | -0.016 | 0.010 | 0.014 |
| 16 | 0.124 | -0.043 | 0.967 |
| 17 | -0.064 | 0.000 | 0.364 |
| 18 | -0.046 | 0.042 | 0.564 |
| 19 | 0.150 | 0.064 | 3.586* |
| 20 | 0.186* | 0.108 | 6.905** |
| 21 | 0.184* | -0.124 | 7.522*** |
| 22 | 0.250** | 0.090 | 9.839*** |
| 23 | 0.178 | 0.125 | 7.232*** |
| 24 | -0.080 | -0.226* | 7.774*** |
| 25 | -0.140 | -0.007 | 1.916 |
| 26 | -0.300*** | -0.161 | 19.246*** |
| 27 | -0.217* | 0.034 | 3.697* |
| 28 | -0.263** | 0.091 | 4.516* |
| 29 | -0.144 | 0.131 | 1.348 |
| 30 | -0.269** | 0.070 | 5.131** |

^asignificant at the 0.05 level; **significant at the 0.01 level; ***significant at the 0.001 level.^bV1=communication and coordination.^cV2=the importance of long-range planning.^dV3=structuring of budgetary processes.^eV4=budget slack.^fV5=controllability of budgets.^gV6=short-term versus long-term performance.

of the *t*-values of the coefficient estimates of size in the equations at both the variable and item levels, except for that in the equation of item 24, was significantly at the 0.05 level, indicating that the effects of size on budget control practices were small to nonexistent.

Summary and Conclusions

This section will present a summary of the main findings, limitations, and implications for managers and researchers.

Summary of the Main Findings of the Study

The results of the *t*-tests revealed that US companies, characterized with individualistic managers, (1) used formal communication and coordination to a greater extent, (2) built budget slack to a greater extent, (3) practiced controllability of budgets to a greater extent, and (4) used long-term performance measures to a lesser extent the results of the *t*-tests on the other two hypotheses prescribed from the uncertainty avoidance dimension and dealing with the importance of long-range planning and the extent of structuring of budgetary processes were equivocal, however.

There was a general recognition that US companies used a relatively rigid style of evaluation based primarily upon whether a manager had met the operating budget. The rigid style of evaluation encourages managers to time or manage business transactions to improve their reported performance and induces companies to practice controllability of budgets to a greater extent. Formal communication and coordination become very important under this style of evaluation for achieving goal congruence between the individuals and the organization.

The initial central question driving this research was whether variations in budget control practices between the two countries can be attributed to cultural differences. Because examination of sample attributes revealed a significant difference in company size between the two samples, multiple regression analyses were performed, including size as controls, and taking six variables and 30 questions as the dependent variables. The regression results at the variable level reported the predicted signs on the coefficients of culture in all the six equations, as shown in Panel B of Table 5. The results also reported the substantial effects of culture on the use of short-term versus long-term performance measures and certain effects of culture on the use of communication and coordination.

The cultural dimension of individualism–collectivism appeared to be a significant factor to explain different practices in the budget control system between the United States and Japan as four hypotheses grounded on this cultural dimension were supported. On the other hand, the cultural dimension of uncertainty avoidance did not appear to explain well the differences in the budget control practices between the two countries.

Limitations of the Study

The findings of any empirical study should be considered in the light of its limitations. A couple of limitations might have existed. First, the sampling design of this study restricts generalizability inasmuch as one cannot be sure that samples obtained were representative of the culture. This study covered only the corporate-level managers in major manufacturing companies. Thus, the results and conclusions relate only to a group of large manufacturing organizations in the United States and Japan.

Second, there might have been a non-response bias. This type of bias might be considered a problem in the United States where the response rate was low (34.1 percent) compared to Japan (60.3 percent), although it was an acceptable rate. Regarding the means of the response between the first and the second mailing, the results of the *t*-tests on the questionnaire items, however, did not show any significant difference.

It is possible that a courtesy or hospitality bias occurs when respondents systematically adjust their responses to conform to the general notion of social desirability or perceptions of the researcher's expectation (Sekaran, 1983). According to Dore (1973), an apparent manifestation of Japanese collectivism and Western individualism is a tendency for Japanese respondents to give average or noncommittal answers, while Anglo-American respondents are somewhat more prone to take strong, even extreme, stands on issues. The Japanese respondents reported the "undecided" response more frequently and concentrated their responses in the neutral range of the scale. This study did not anticipate this type of bias and therefore did not correct it.

Implications of Findings

Some implications of the findings from the present study are noted briefly. The budget control practices chosen by any company reflect to some degree the culture in which it is operating as well the nationality of its ownership. On this note, US and Japanese expatriate managers, who adapt their typical domestic control systems to foreign operations, should at least be aware of the cultural characteristics of their own systems and prepare for the potential differences in responses of local employees to these systems. Otherwise, such transference efforts will be ineffective at best and counterproductive at worst. The judicious use of these research findings is encouraged.

In general the outcomes of the analyses were positive. However, extreme care to develop survey instruments must be exercised in future research; that is, in an area as complex as budgetary control systems, there needs to be much clarity of the construct. In other words, cross-cultural researchers must carefully scrutinize the adequacy of measurements, research design, methodology, and statistics. Otherwise, interpretation of the data can be erroneous.

Based on the experience with this research project, some of the directions for future research are proposed. The area which this study did not address, but which should be addressed, is the influence of internal and external environments of a company on budget control practices. This study did not directly control either an environmental uncertainty or an organizational structure. It is possible, however, that the response to some specific questions may be influenced systematically by

these variables. Therefore it is urged that researchers will expand their interests into the area.

Another area for future expansion is the effectiveness of budget control systems in the context of a set of national cultural dimensions. The identification of the preferred modes of behavior of organizational participants toward budget control systems will facilitate the design of effective control systems. Thus, research expansion to this area is important not only for academic curiosity but also for designing effective control systems.

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Appendix 1

QUESTIONNAIRE

Company name _____ Your name _____

Section I

Your age _____

Your functional position or title _____

Length of time with the company _____ years

Length of time in your present position _____ years

Section II

Below are 30 statements which refer to various facets of the budget control practices. Please circle the number that is most appropriate for each item as it pertains to your company, using the following scale.

The response scale is:

| | | | | |
|-----------|-----------|----------|--------|--------|
| Strongly | | | | |
| Disagree. | Disagree. | Neutral. | Agree. | Agree. |
| 1 | 2 | 3 | 4 | 5 |

A. *COMMUNICATION AND COORDINATION:* This refers to the extent to which organizational subunits get involved in the budgetary process.

1. In our company, a necessary requirement of an annual budget is that it is formulated by the group it affects. 1 2 3 4 5

2. In our company, the development of annual budgets is a long-drawn process with several levels of management participating in it. 1 2 3 4 5

3. In our company, corporate budgets are formulated by integrating divisional budgets developed by budget committees at the divisional level. 1 2 3 4 5

4. In our company, budgets are formulated after joint discussions with the managers concerned. 1 2 3 4 5

5. In formulating a divisional budget, we usually do not spend too much time and effort for obtaining inputs from the employees concerned. 1 2 3 4 5

B. THE IMPORTANCE OF LONG-RANGE PLANNING: This refers to the time-frame of budget plans in your organization. Planning time-horizons are categorized as short-range if the planning covers one year or less, and long-range if the planning covers three years or more.

6. In our company, short-range budgets are developed only after elaborate discussions of long-range budgets. 1 2 3 4 5

7. In our company, long-range financial planning has been deliberately pursued to deal with future uncertainty. 1 2 3 4 5

8. In our company long-range budgets are formulated comprehensively, covering every functional area of the firm 1 2 3 4 5

9. Long-range budgets are not considered to be very important in our company. 1 2 3 4 5

10. Our company does not spend much time and effort to formulate long-range budgets 1 2 3 4 5

C. STRUCTURING OF BUDGETARY PROCESSES: This refers to the extent to which procedure's and rules are considered to be important for formulating budgets.

11. In our company, detailed procedures and rules have been established to develop long-range budgets 1 2 3 4 5

12. While developing budgets, budget manuals are referred to and followed throughout in our company. 1 2 3 4 5

13. In our company those who do not follow the rules and procedures as set forth in the budget manual, are admonished 1 2 3 4 5

14. Budget manuals are not comprehensive in our company, covering every functional area of the firm 1 2 3 4 5

15. Our company does not adhere strictly to budget manuals while formulating budgets. 1 2 3 4 5

D. BUDGET SLACK: Budget slack is deemed as a deliberately created difference between the true budget estimate and the formulating budget figure.

16. In our company, managers usually build some slack in the budget 1 2 3 4 5

17. In our company, managers usually try to build as much slack as possible in the budget so as to have access to extra resources. 1 2 3 4 5

18. In our company, managers build slack in the budget to do things that otherwise cannot be done. 1 2 3 4 5

19. In our company, managers build budget slack to prepare for future uncertainty. 1 2 3 4 5

20. In our company, managers do not have the tendency to build budget slack. 1 2 3 4 5

E. CONTROLLABILITY OF BUDGETS: This refers to the extent to which managers within the budgetary control system are charged or credited only for items within their control.

21. While developing divisional budgets, managers sufficiently distinguish controllable and non-controllable items and managers are charged or credited only for the items under their control. 1 2 3 4 5

22. Our company practices flexible manufacturing overhead budgets to a large extent. 1 2 3 4 5

23. Our company practices responsibility accounting to a great extent. 1 2 3 4 5

24. In our company, managers will absolutely refuse to be held accountable for any unfavorable budget variance when they do not have full control. 1 2 3 4 5

25. In our company, divisional budgets include items which may not be under the direct control of the divisional managers. 1 2 3 4 5

F. SHORT-TERM VERSUS LONG-TERM PERFORMANCE: This refers to the evaluation of short-term and long-term performance of managers as they relate to budgets. Short-term is defined as performance which covers One year Or less, and long-term covers three years Or more.

26. In our company, managers are evaluated basically on their long-term performance

1 2 3 4 5

27. In our company, an exceptional performance in the short-term does not necessarily deserve as much reward as consistent good performance over the long-term. 1 2 3 4 5

28. In our company, importance is attached more to short-term performance than to long-term performance. 1 2 3 4 5

29. In our company, long-term budget performance is seldom used as a criterion for evaluating managers. 1 2 3 4 5

30. The manager who has an unfavorable short-term budget variance is not evaluated negatively in our company. 1 2 3 4 5

Thank you for completing this questionnaire. Would you please check to see that you have responded to all the questions?

- I want to receive a copy of the research summary.
- I do not want to receive a copy of the research summary.

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An Enhancement to IAS 8: “Unusual and Prior Period Items and Changes in Accounting Policies”

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Key words: Business segments; IAS 8; International Accounting Standards; Segment disposal; Unusual items

Abstract: This paper examines the guidelines set forth in IAS 8 and IAS 14. The deficiencies in these guidelines with respect to the definition of a business segment and the income statement presentation of the gain or loss from the sale of a business segment allow companies in International Accounting Standards Committee (IASC) member countries to issue poorly specified income statements and still be in compliance with IASC standards. We utilize a forecasting approach to derive a materiality threshold for classifying the gain or loss from the sale of segment into income from ordinary activities and income from unusual items. Our research suggests that modification of IAS 8 to include a materiality threshold would bring the IASC closer to their objective of improving the quality of the statements issued by member countries.

The International Accounting Standards Committee (IASC) seeks to standardize financial reporting among member countries by formulating, implementing, and improving international accounting and disclosure standards. Since its inception in 1973, the IASC has tackled the monumental task of developing a comprehensive set of accounting standards which simultaneously minimizes accounting alternatives and responds to the diverse reporting needs of the various economic systems represented by member countries. Moreover, the IASC's efforts have been constrained by its inability to enforce its standards in member nations.¹ Despite these problems, the work of the IASC has generated support from various economic organizations and national stock exchanges.²

Until the late 1980s, the IASC standards were general in nature and replete with accepted alternative accounting practices. In 1990 the IASC approved a Statement of Intent (also known as the Comparability Project) that proposed the elimination of

most of the accounting alternatives from its existing standards. The statement also indicated that additional standards and guidance designed to provide useful information for users of financial statements would be forthcoming in the framework of an improvement project that is due to be completed in 1993. The IASC views the enhancement of the quality of its standards as one of its fundamental policy objectives.

IASC Standard No. 8, "Unusual and Prior Period Items and Changes in Accounting Policies," is a basic standard that requires separate disclosure in the income statement of income from ordinary activities and income from unusual items. This requirement is also formulated from a forecasting perspective in the IASCs discussion on the relevance of financial statement data. Specifically, Paragraph 9000 A.17 of the IASC Objectives and Procedures states:

The ability to make predictions from financial statements is enhanced (however) by the manner in which information in past transactions and events is displayed. For example, the predictive value of the income statement is enhanced if unusual, abnormal and infrequent items of income or expense are separately disclosed.³

In line with the IASC's objective of enhancing the quality of its standards, this paper examines the issue of how gains and losses on segment sales should be disclosed in financial statements. Since a basic objective of financial reporting from the IASC's perspective is to specify elements of income that predict future earnings, we utilize a forecasting approach to derive a materiality threshold for determining whether the sale of a business segment should be reported as ordinary income or income from a non-ordinary event. This determination hinges on whether the ability to forecast future income from ordinary events can be enhanced by repositioning the sale of a segment with income from non-ordinary events. Using a materiality threshold could improve financial reporting by establishing more objective and uniform reporting standards for dispositions of business segments and as a consequence enhance the quality of IASC standards.

An examination of the research that compares the compliance of member countries with various IASC standards reveals that 89 percent of member countries require separation of income from ordinary events from income from non-ordinary events.⁴ However, there are neither specific IASC guidelines nor uniform reporting practices with regard to the disclosure of the sale of a segment as either ordinary or non-ordinary income. For example, Italy requires no particular income statement treatment, Germany allows above-the-line presentation without disclosure, and Canada requires separate below-the-line presentation with accompanying footnote disclosure.⁵

IASC Standard No. 14, "Reporting Financial Information by Segment", provides guidelines for the reporting of financial data for business segments. Components of businesses that are defined as segments are determined on the basis of products and services types of customers, geographic location of operations and/or markets. Paragraph 11 of IAS 14 states that "it is the responsibility of management to exercise judgment in determining how the enterprise activities are to be grouped for reporting as segments". Thus, IAS 14 permits managerial discretion in defining a business segment for financial reporting. Because the term "segment" has various definitions, we use "sale of a component" to describe the gains and losses that are reported either above-the-line or below-the-line.

In sum, the definitions of "business segment" are numerous and subjective, as are the actual practices used in positioning gains and losses from the disposal of such business components. Previous research has indicated that relatively more gains from the sale of components in the United States are reported as ordinary income and relatively more losses are reported as income from non-ordinary events, possibly due to management's preference for conveying more favorable results.⁶ These conclusions run counter to the objectives of the IASC to distinguish between recurring and non-recurring events that affect net income.

To simplify the ensuing discussion, gains and losses from the disposal of components reported as ordinary income will be referred to as *above-the-line gains and losses*. Those gains and losses from the sale of components reported as income from non-ordinary events will be referred to as *below-the-line gains and losses*.

The remainder of this paper consists of three sections. The first describes the procedure by which the sample of companies reporting gains and losses was selected. The second section contains the research methodology utilized in the paper and the results. The last section presents the conclusions of the research.

Sample Selection

The disclosure of the gains and losses on the disposition of business components reported above-the-line is necessary to test whether forecasting future income from ordinary events can be improved by repositioning, below-the-line, the gains and losses from the sale of components that are presently reported above-the-line. Financial reports of companies representing all IASC member countries would have been the ideal database for this research. However, only two member countries, the United Kingdom and the United States, require disclosure of gains and losses on the sale of business components above-the-line. More often than not, this information appears in the footnotes to the financial statements. To gain access to the maximum number of footnote disclosures for a particular time horizon, it was decided that an automated accounting retrieval system should be utilized. However, only one system that generates footnote disclosures was found, and the system includes US companies only. For this reason, financial reports of US companies are used for the sample. This does not suggest that the United States is necessarily a model for standard setting. However, the extensive and accessible empirical resources available for US companies facilitate the analysis of the research addressed in this paper.⁷

The National Automated Accounting Retrieval System (NAARS)⁸ was utilized to gather a sample of companies reporting the sale or disposal of a business component as part of ordinary income in 1985 or 1986. These above-the-line sales were often included under the caption Other Income or Loss. Therefore, the financial statements and footnotes referencing the disposal were examined. The forecasting framework chosen requires information of years prior to and following the forecast year. To meet the requirements of the forecasting models, the financial statements and footnotes were also examined for three years prior to the sale of the business component and one year following the sale. To be included in our sample, the dollar amount of the gain or loss had to be disclosed in the footnotes. In addition, income statements and

footnotes had to be available from NAARS for three years prior to the sale and one year following the sale.

The sample of above-the-line sales consisted of 231 events: 136 gains and 95 losses. This sample was used in a forecasting framework to examine whether a below-the-line classification of the gain or loss from the sale of a business component could improve the ability of ordinary income to predict future earnings.

Methodology and Results

Previous research indicates that the ambiguity associated with the definition of a segment gave rise to imprecise treatment of the gain or loss on the disposal of a business component as an element of ordinary income or income from non-ordinary events.⁹ In this paper we use a forecasting framework to examine the consequences of classifying the gain or loss on the disposal of a component as ordinary income and its implication on international accounting standards. The motivation for the forecasting approach is that ordinary income is frequently used in models that predict the future earnings of an entity.¹⁰ More specifically, ordinary income might be improved as a forecasting variable if the gain or loss from the “above-the-line” sale were removed.

There are two reasons for this possibility. First, the sale of a segment reported above-the-line inhibits the predictive value of ordinary income because of the “one shot” random nature of the event that contributes to income. Second, a bias could exist in the reporting of gains from segment dispositions above-the-line. This bias may manifest itself in the form of attempts by management to smooth reported earnings over time by classifying income as “ordinary” when in fact the appropriate classification would be extraordinary or unusual.¹¹ This behavior could further weaken ordinary income as a predictor for future earnings.

In order to examine whether this weakness exists, the following hypothesis was developed and tested:

H_{01} : The classification of the sale of a component as part of ordinary income does not affect the accuracy of the forecast of the following year’s ordinary income.

Since our sample was composed of US companies, Income from Continuing Operations (ICO) was utilized as a surrogate for ordinary income. In testing the hypothesis, two forecasts of ICO in the year following the sale of the component were compared. The first forecast used ICO as reported on the Income Statement in the year of the sale to forecast ICO in the year following the sale. The second forecast removed the “above-the-line” gain or loss from ICO. This adjusted ICO (AICO) was used to forecast ICO in the year following the sale. The errors from these two forecasts were compared in order to determine whether ICO or AICO predicted the following year’s ICO with greater accuracy.¹²

The comparison of the errors revealed that removing the above-the-line sale significantly improved the ability to forecast the following year’s ICO. Table 1

Table 1. Test results for gains and losses

| | Calculated <i>t</i> -Value | Sample size |
|---------------------|-------------------------------|-------------|
| Total sample | 4.98* | 231 |
| Total sample gains | 2.22** | 136 |
| Total sample losses | 5.08* | 95 |

*Significant at a confidence level of 99%

**Significant at a confidence level of 95%

contains the calculated *t*-values and sample sizes for the total sample, the sample of gains, and the sample of losses. At the 99 percent confidence level, $t_{\text{critical}} = 2.33$.¹³ Consequently, if the calculated *t*-value for the sample is greater than 2.33, the null hypothesis is rejected. The *t*-value for the total sample was equal to 4.98.¹⁴ Therefore, it can be asserted with greater than 99 percent confidence that removing the above-the-line gain or loss improves one's ability to forecast ICO in the year following the sale of a segment that is reported above-the-line.¹⁵

The analysis of the sample of gains and the sample of losses revealed similar results. For the total sample of gains, the *t*-value is 2.22. At the 95 percent confidence level, $t_{\text{critical}} = 1.96$. Therefore, we state with greater than 95 percent confidence that our ability to forecast ICO in the year following the sale is significantly improved by removing the above-the-line gain.

The sample of the above-the-line losses was examined in a similar manner. Removing the above-the-line losses significantly decreases the error that results from the forecast of ICO. It can be stated with greater than 99 percent confidence (*t*-value = 5.74) that for the full sample of above-the-line losses the forecast accuracy is significantly improved by removal of the above-the-line loss from ICO.

To determine if the increase in forecast accuracy that results from the removal of the above-the-line event is dependent on the size of the event, the sample was divided into groups based on the magnitude of the sale of the component. The sale was classified in terms of its magnitude relative to the firm's AICO in the year of the event. AICO was used instead of ICO to allow gains and losses of equal size to be classified similarly. To illustrate, consider two firms with the same pre-event income of \$10 000. Assume that Firm A has a loss from the event of \$5000, and Firm B has a gain from the event of \$5000. ICO would be \$5000 for Firm A and \$15 000 for Firm B. Using ICO to determine the magnitude of the event would have Firm A reporting the event as 100 percent of ICO, and Firm B reporting the event as 33 percent of ICO. Using AICO would have both events classified as 50 percent of AICO.¹⁶ Therefore, AICO provides a better measure of the relative size of the event.

Table 2 contains the calculated *t*-values and the sample sizes for the total sample, the gains, and the losses for events greater than or equal to ten percent of AICO and less than ten percent of AICO. At the 99 percent confidence level, $t_{\text{critical}} = 2.33$. The *t*-value for the total sample of events that are greater than or equal to 10 percent of AICO is 4.32. Therefore, it can be stated with greater than 99 percent confidence that the removal of the event improves forecast accuracy. For events that are less than 10 percent of AICO the forecast accuracy is still improved when the event is

Table 2. Test results for total sample and for gains and losses as a percentage of AICO

| <i>Total sample</i> | | |
|--------------------------------------|----------------------------|-------------|
| Total sample as a percentage of AICO | Calculated <i>t</i> -value | Sample size |
| ≥10% of AICO | 4.32* | 170 |
| <10% of AICO | 1.08 | 61 |
| <i>Gains from component sales</i> | | |
| Gain as a percentage of AICO | Calculated <i>t</i> -value | Sample size |
| ≥10% of AICO | 2.10** | 98 |
| <10% of AICO | 0.95 | 38 |
| <i>Losses from component sales</i> | | |
| Loss as a percentage of AICO | Calculated <i>t</i> -value | Sample size |
| ≥ 10% of AICO | 5.25* | 72 |
| < 10% of AICO | 1.19 | 23 |

*Significant at a confidence level of 99%.

**Significant at a confidence level of 95%.

removed. However, this improvement is not statistically significant at acceptable confidence levels. If greater forecast accuracy resulted from the inclusion of the above-the-line sale, the calculated *t*-value would be negative.

Similar statements can be made when the gains and losses are analyzed separately. At the 95 percent confidence level, $t_{critical}$ is 1.96. The *t*-value that results from the analysis of the gains that are greater than or equal to ten percent of AICO is 2.10. Therefore, it can be stated with greater than 95 percent confidence that removing the above-the-line gain improves forecast accuracy.

When gains of less than 10 percent of AICO are removed, the forecast accuracy is still improved. However, this improvement is not statistically significant at acceptable confidence levels.

The size of the loss relative to AICO is also important for the sample of losses. At the 99 percent confidence level, $t_{critical} = 2.33$. For losses greater than or equal to 10 percent of AICO, the *t*-value = 5.25. Therefore, we can state with greater than 99 percent confidence that removal of the loss improves forecast accuracy. As the size of the loss relative to AICO decreases, the statistical significance of the difference between the forecast errors also decreases. For the above-the-line losses that are between 1 and 10 percent of AICO, there is no significant difference between the accuracy of the forecasts. However, as long as the magnitude of the loss is greater than 10 percent of ICO, the forecast of ICO is improved by removing the loss.

In sum, the removal of above-the-line gains and losses on the sale of a segment improves the forecast of next year's ICO. Furthermore, as long as both gains and losses are greater than 10 percent of AICO, their removal enhances the forecast of ICO for the following year at a confidence level of at least 95 percent.

Summary and Conclusions

The importance of segregating income from ordinary activities from income from unusual items is recognized by the IASC and many member countries. However, the guidelines set forth in IAS 8 and IAS 14 do not provide clear direction with regard to the proper income statement presentation of gains and losses from the sale of a business component. As a result, companies in member countries issue poorly specified income statements. Poorly specified income statements are not consistent with the IASC objective of improving the predictive value of accounting information.

This paper examined the forecasting implications of using a materiality threshold to classify the gain or loss from the sale of a business component into income from ordinary activities and income from unusual items. Specifically, we observed the effects of below-the-line placement of gains and losses from the sale of business components on the ability to forecast ICO. Our results demonstrate that the removal of gains and losses attributable to the disposal of a component increases the forecast accuracy of ICO in cases where the gain or loss is greater than 10 percent of ICO.

Our research suggests that an enhancement of IAS 8 would be to include below-the-line presentation of all gains and losses from the sale of business components that exceed 10 percent of operating profit net of the gain or loss from the sale of the component. Implementing this suggestion would result in a materiality standard which classifies income from the sale of a component as ordinary or unusual. This classification would contribute to the predictive utility of international income statements that conform to IASC standards.

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Appendix A

This appendix describes the statistical methodology used to test the null hypothesis, H_{01} .

H_{01} = The classification of the sale of a component as part of ordinary income does not affect the accuracy of the forecast of the following year's ordinary income.

The alternative hypothesis is that the classification of the sale as part of ICO reduces the accuracy of the forecast of the following year's ICO. Therefore, the hypothesis is tested using a one-tailed test consistent with confidence levels reported in the text. For our purposes, H_{01} is consistent with the difference between ERROR1 and ERROR2 being zero. Therefore:

$$t\text{-value} = \frac{\sum_{i=1}^n (\text{ERROR1} - \text{ERROR2})/n}{\sigma_{(\text{ERROR1} - \text{ERROR2})}/\sqrt{(n-1)}}$$

Where:

n = number of companies in sample

$$\text{ERROR1} = \frac{\text{ICO year following sale} - (\text{ICO year of sale} + \text{Drift1})}{\text{ICO year following sale}}$$

$$\text{ERROR2} = \frac{\text{ICO year following sale} - (\text{AICO year of sale} + \text{Drift2})}{\text{ICO year following sale}}$$

Drift 1 is the weighted average forecast error that results from assuming that ICO follows a naive model in the three years prior to the sale.

$$\text{Drift1} = [1/2 (\text{ICO year of sale} - \text{ICO 1 year prior to sale}) + 1/3 (\text{ICO 1 year prior to sale} - \text{ICO 2 years prior to sale}) + 1/6 (\text{ICO 2 years prior to sale} - \text{ICO 3 years prior to sale})]$$

Drift2 is calculated similarly. However, Drift2 removes any above-the-line event that occurs in the three years prior to the studied year. For the majority of the sample, Drift1 = Drift2 since there were no other above-the-line sales in the three years prior to the studied year.

Notes

1. J.M. Rivera, "The Internationalization of Accounting Standards: Past Problems and Current Prospects." *International Journal of Accounting* (1989, Vol. 24, No. 4), 321.
2. B.R. Doyle and S.D. Spencer, "International Accounting Standards: Why They Merit Support." *Management Accounting* (October 1986), 28.
3. IASC *International Accounting Standards Committee: Objectives and Procedures* (Chicago, IL: Commerce Clearing House, 1990), Para. 9000 A.17.
4. IASC, *Survey of the Use and Application of International Accounting Standards* (London: IASC, July 1988).
5. Coopers & Lybrand, *International Accounting: A Guide for Interpretation and Comparison* (New York: Wiley, 1991).
6. Donna Rapaccioli and Allen Schiff, "Reporting Sales of Segments Under APB Opinion No. 30." *Accounting Horizons* (December 1991), 55.
7. Arthur R. Wyatt, "President's Message." *Accounting Education News* (January 1992), 1.
8. The NAARS database is maintained by the AICPA and is composed of the annual reports of companies trading on the NYSE, AMEX or OTC that comply with the AICPA's requirements for inclusion in the NAARS database.
9. Donna Rapaccioli and Allen Schiff, op. cit., 58.
10. Other published research that uses this approach includes: R.M. Barefield and E.E. Comiskey, "The Smoothing Hypothesis: An Alternative Test." *Accounting Review* (April 1972); A. Barnea, J. Ronen, and S. Sadan, "Classificatory Smoothing of Extraordinary Items." *Accounting Review* (January 1976); J. Ronen and S. Sadan, "Classificatory Smoothing: Alternative Income Models." *Journal of Accounting Research* (Spring 1975).
11. For a comprehensive review of the income smoothing literature, see S. Sudan and J. Ronen, *Smoothing Income Numbers* (New York: Addison-Wesley, 1981).
12. In order to compare the accuracy of the forecasts, assumptions must be made about the underlying process that ICO follows. In this paper, we assume ICO follows a naive model with a drift. The drift term represents the weighted average forecast error that results from applying the naive model in the three years prior to the sale. See Appendix A for the formulation and testing of the forecasting hypothesis.

13. The critical values reported are derived from the normal distribution since all of the samples discussed in the text contain greater than 30 observations. Using the normal distribution to generate critical values or samples with greater than 30 observations is generally accepted since the critical values reported for the normal distribution are almost the same as those under the *t*-distribution. (Lawrence L. Lapin, *Statistics For Modern Business Decisions*, New York: Harcourt Brace Jovanovich, 1952, 252.)
14. The results reported are based on the model specified in Appendix A. A *t*-test was also conducted for a naive model, i.e. the tested model without a drift. Under this model, the *t*-value was 2.93. For both models in situations where $|ERROR1| - |ERROR2|$ was greater than or less than one, $|ERROR1| - |ERROR2|$ was replaced with 1 or -1. This was done to avoid a few very large observations biasing the results. The results for the full sample specified by the model in Appendix A using the actual $|ERROR1| - |ERROR2|$ value are similar (*t*-value = 3.83).
15. Non-parametric tests were performed to ensure that our results were not dependent on the assumption of normality. The sign tests confirmed the results of our parametric tests. For the full sample, there were 136/231 situations where $ERROR1$ was greater than $ERROR2$. Assuming equal probability of positive and negative differences, the resulting test statistic equals 2.70. This indicates that at the 99 percent confidence level there was greater forecast accuracy when the above-the-line event was removed.
16. The results using ICO to classify the events by magnitude were stronger than the results using AICO. The *t*-values for the total sample, the sample of gains, and the sample of losses were 5.98, 2.49, and 5.74, respectively. All these values were significant at the 99 percent confidence level.

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Economic Determinants of International Transfer Pricing and the Related Accounting Issues, with Particular Reference to Asian Pacific Countries

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Key words: Economic determinants; Performance evaluation; Transfer pricing methods; Tax harmonization; Cost allocation; Asian Pacific; Environmental determinants

Abstract: This paper concentrates on international transfer pricing (ITP) in some Asian Pacific (AP) countries. We analyze the economic environments, internal and external, for ITP in the AP area. Possible arm's length pricing methods are discussed. The areas for accounting consideration include segment reporting, performance analysis, consolidation practices for intra-company transactions, auditing, and proper cost measurements if the cost-oriented method is preferred. We conclude that, due to the present environment, the ITP will be widely manipulated in the AP and the possible harmonization of different accounting and tax aspects may help lessen the conflicts over the issue.

1. Introduction

International transfer pricing (ITP) has been discussed by many Western economists. Research efforts focused on different aspects of the issue. Tang (1979, 1982) compared ITP practices in the United States, Japan, Canada, and the United Kingdom, to identify the country differences of the economic determinants of ITP. Yunker (1982) did an empirical study to investigate the relationship between control, performance measurement, and ITP. Eccles (1985) focused on ITP as a strategic and managerial mean. Benke and Don Edwards (1980) studied the problem to illustrate ITP and

performance measurements in different organizational structures. Although Tang (1979) commented on the Japanese ITP issue, many countries in the Asian Pacific (AP) area differ from the Japanese environment and are still less developed countries (LDC). Plasschaert (1985) has analyzed ITP problems in LDC, but his research was restricted to the fiscal determination and economic strategic point of view of the LDCs. In the AP region, the economic development has been so vigorous over the last decade and so heterogeneous that rich and poor countries exist as neighbors. The general theories and research mentioned should be modified and specified to the environments existing in the AP countries. Another consideration is the effect of ITP on accounting regulation and accounting-based performance evaluation. Since there is no apparent tendency in the AP countries to harmonize accounting practices and accounting techniques to adjust for the effects of ITP, any decision based on the accounting information for a current period might be biased.

In recent years, economic cooperation and cross investments between AP countries and regions have expanded very rapidly. Newly industrialized countries, such as Japan, South Korea, Taiwan, and Hong Kong, invested greatly in LDC countries, such as China, Thailand, Indonesia, and the Philippines. This phenomenon has created a variety of economic environments for international ITP practices. In section 2, we analyze these environments: (1) external factors facing a multinational enterprise (MNE), such as tax, tariffs, currency risks, and profit repatriation limitations; and (2) internal factors of a MNE, such as performance evaluation, income smoothing, off-balance-sheet financing, and political costs. One of the new concerns concerning such accounting is that together with other accounting manipulations ITP can be part of the manipulative "portfolio" of the financial reporting procedures. Section 3 discusses the possible disadvantages for the local governments when ITP is practiced. We discuss the situations when the local governments wish to be "robbed" and do not wish to be "robbed".

Section 4 briefly introduces the typical ITP methods and the problems of defining these methods. Finally, in sections 5 and 6 we argue that to minimize the undesirable impact of practices of ITP and its effects on the local economy, one must first seek the possibilities for AP countries to harmonize their accounting and tax laws to reduce the conflicts between members of the MNEs and different authorities. The areas for accounting consideration include segment reporting, performance analysis, consolidation practices for intra-company transactions, auditing, tax auditing practices, and proper cost measurements if the cost-oriented methods are preferred.

To limit the scope of the paper, we restrict ourselves to the following assumptions concerning international transfers: (1) intra-firm; (2) merchandise transfers for MNEs, e.g., components or material transfers; (3) from investors to investees.

2. Environmental Determinants of Transfer Pricing

Generally, two most important motivations for ITP practices are considered (Benke and Don Edwards 1980, pp.18-19) "The role of transfer pricing in a business enterprises is to promote goal congruence and enhance performance evaluation",

that is, global profit maximization and performance evaluation. Global profit maximization includes reducing the tax and import duties, reducing the currency risk, and accelerating the return on investment. Performance evaluation requires that using ITP should not distort the performance evaluation of the affiliates. Performance evaluation includes criteria such as return on investment, residual income, and variance from budgeted or standard costs. Tang (1979) investigated this by conducting a questionnaire survey of some US and Japanese firms. The five most important determinants of ITP for his Japanese sample were (in order of importance): (1) profit consideration; (2) competitive position of foreign subsidiaries; (3) devaluation and revaluation of the foreign currencies; (4) restrictions on the repatriation of profits and dividends; and (5) divisional performance evaluation. Since Japan is a major investor in the AP area, its consideration of these variables is very significant in observing Japanese ITP policies of its subsidiaries in the other AP countries who compete to attract Japanese investors. If other AP countries wish to provide some attractive environments to Japanese investors, ITP and these related variables should be considered.

External Factors on Profit Maximization

There are several reasons or determinants for ITP to maximize the global profit. These determinants include: income tax rate, import duties, withholding taxes, profit repatriation policies, currency fluctuations, and the form of the investments. Each determinant can influence whether an MNE would apply an overpricing or underpricing strategy.

Corporate Income Tax

Generally, the lower the income tax of the host country as compared to that of the home country, the more the ITP from home to host country transfer would reduce the total tax expense. Currently, the income tax rate imposed in some AP countries is very low in order to attract foreign investments (see Appendix 1). A typical tax incentive offered by many AP LDCs is the example of Chinese tax regulations. In the People's Republic of China, the corporate tax rate is 30 percent plus a 10 percent local tax, amounting a 33 percent total tax rate. Therefore, holding other variables constant, a Japanese MNE would attempt to shift profit by underpricing its goods transferred to the subsidiaries in China or the Philippines.¹

Many countries allow special tax treatments for the foreign investment. For example, the Chinese government provides the following preferential tax policy for foreign investors (summary from Arthur Andersen & Co., 1989):

- (1) A joint venture formed for a duration of ten years or more is entitled to full exemption from tax for two years commencing from the first profit-making year and to a 50 percent tax reduction in the next three years.
- (2) Wholly owned foreign enterprises can have an exemption for the first three profit-making years.

- (3) Depreciation of fixed assets may be accelerated thereby allowing a more rapid recovery of invested funds. This is particularly relevant in the case of off-shore oil enterprises.
- (4) Machinery and other raw materials imported for use by Chinese/foreign equity joint ventures shall be exempted from consolidated industrial and commercial tax (CICT).
- (5) Products manufactured for export are exempted from CICT, as well as the imported raw materials used in the production for export.
- (6) To promote the use of high technology, royalties received by foreign enterprises operating in the high-tech area can receive as much as a 50 percent income tax reduction.

In March 1990, the Chinese government reviewed its tax system for foreign investors in the Special Economic Zones (SEZ). A favorable 15 percent income tax is charged on manufacturing joint ventures or wholly owned foreign businesses which are in the SEZ. Enterprises in the Zones which export 70 percent of their products are entitled to pay only half of the 15 percent income tax after tax holidays for the first few years in line with various laws and regulations. A 40 percent income tax refund can be granted to foreign investors if their joint venture income is re-invested in China for projects covering a period of at least five years. A complete refund of income taxes will be made if the income is re-invested in opening or expanding export-oriented or technologically advanced enterprises that have a contracted period over five years. Foreign investors are charged only a 10 percent income tax on their profits from the sale of technical know-how to Chinese enterprises in sectors of agriculture, scientific research, energy, transport, and communications. Their profit can also be exempted from income tax if such know-how is technologically advanced and sold under favorable terms.

With such a tax policy, it must also be very attractive for foreign investors to understate ITP to their Chinese affiliates, particularly in the first few years. By ITP manipulations, an MNE can benefit not only from lower income taxes in host countries but also from the tax savings from ITP.

Suppose an MNE's affiliate has TI total taxable income before subtracting the intra-company purchase of Q units of material; the maximum price for such a transfer is P_2 (e.g., market monopoly price); the minimum charge is P_1 (e.g., variable cost or marginal cost), $P_2 > P_1$; the home tax rate is t_1 and host tax rate is t_2 , $t_2 < t_1$. Then, the total maximum tax saving (TS) if P_1 is applied is:

$$TS = (P_2 - P_1)(t_1 - t_2) + (TI - P_1Q)(t_1 - t_2)$$

The first part of the right hand side of the equation is the tax saving due to ITP practices and the second part is due to income tax rate differences. As long as $t_1 > t_2$, it is always beneficial to reduce P_1 , *ceteris paribus*.

Import Duty

The underpricing of intra-company transactions may also be motivated by the import duty imposed on the transfers. In AP countries, *ad valorem* import duties are normally

very high. In addition to being protectionist, these duties are also intended to increase revenues and reduce balance of payment problems of the LDCs. In this case, the lower the P_1 , the less import duty an MNE has to pay. The total saving on import duty (IDS) is:

$$IDS = (P_2 - P_1) d_2$$

where d_2 is the *ad valorem* import duty rate in the host country.

Withholding Tax

The above two variables encourage the underpricing of ITP from home country to host country. However, there are other constraints for such an action. The effect of withholding tax is one of them. The higher the withholding tax, the lower return the parent MNE can obtain. By overpricing the ITP, the firm can exempt part of the profit from the withholding tax. This saving (WTS) can be:

$$WTS = (P_2 - P_1)w_2$$

where w_2 is the withholding tax rate in the host country. It is different from country to country. Japan has 20 percent rate of w_2 for foreign corporations except for US companies which are subject to only 10–15 percent. In China, normally a rate of 20 percent of w_2 is imposed on dividends, interest, royalties, and other sources of income in China. In other AP countries, withholding tax rates differ in respect to each country and each income. Typical withholding tax rates of selected AP countries are shown in Appendix 1. By considering such non-unified withholding tax rates, an MNE can monitor its ITP policy to adjust the effects of withholding taxes.

Profit Repatriation

Another factor countering an underpricing policy is a restriction on profit repatriation. In many AP countries, due to the lack of foreign currency reserves and balance of payment problems, a number of governments prohibit, directly or indirectly,² profit repatriation. MNEs face the difficulties of profit remittance to the home country. In this case, many MNEs practice ITP by overpricing, to obtain an “earlier return”. This can significantly reduce their risk in their investments. By retaining part of the profit via ITP, firms can again enjoy the benefits of the “re-investment” tax rates.

Currency Fluctuations

In relation to profit repatriation regulation, another incentive for the overpricing of ITP is the weakness of a particular currency. As most AP currencies are controlled or semi-convertible currencies, an MNE could find problems in converting its profit into its own currency. Therefore, overpricing the ITP can increase immediate income and reduce problems in repatriating profits. For the convertible currency, the fluctuations of the related currencies are also very relevant. An MNE can hedge such exchange risk by lagging (if the home currency is expected to weaken) the income (lower ITP) or by leading (if the host currency is expected to weaken) the income (higher ITP).

During the 1980s, the Chinese currency (RMB) experienced consistent devaluations (on the official market). The recent devaluation of more than 26 percent against other major currencies could substantially reduce the profit by foreign MNEs if they did not take some measures to hedge against the devaluation. In Taiwan, it was just the opposite, its currency (Yuan) has experienced major revaluations upward during the last decade. Many AP countries have either non-free currencies or fluctuating currencies. Therefore currency risk becomes one of the most important determinants of ITP practices in the AP area.

The Form of Investment

The form of investment is also important for a firm in considering its ITP policy. According to Plasschaert (1985), a firm would more probably overprice its ITP if it has only invested in a joint venture than if it has invested in a wholly owned subsidiary. The reason is very simple; the firm has only a 50 percent profit share if it invested in a joint venture. But by overpricing the ITP, it can earn 100 percent of the overpriced portion. Of course, to receive approval of such an overpriced transfer by the board of directors in that particular joint venture is also an effort and it might prove to be a difficult process.

The above variables indicate that international ITP is a management device which can exploit environmental differences between related countries. These differences commonly exist between many developed and developing countries in the AP region. As the development of this area accelerates, the environmental differences for ITP are becoming more important and ITP manipulations may be inevitable.

Many contradictions appear in some AP governments' decisions to attract foreign investments on one hand and to prevent being "robbed" by ITP manipulations of the investors on the other. The problem is that these two policies are intertwined. To attract foreign investment, many Asian countries offer some preferential policies. These preferential policies in turn provide incentives for MNEs to "rob" the host countries through the tax saving mechanism of ITP manipulations. As long as:

TS+IDS > WTS

the tax benefits obtained by MNEs are not only limited to the differences of tax rates, but also the benefits of ITP practices. If the other financial considerations are negligible, the availability of ITP variations will greatly benefit the MNE investors.

Internal Factors: Corporate Management Performance Evaluation and Internal Control

Performance Evaluation

The factors we discussed in the previous section are external factors for MNEs. Another major consideration of ITP policy is performance evaluation (the fifth consideration for Japanese MNEs noted by Tang 1979). It is an internal factor. It is alleged (Benke and Don Edwards, 1980, pp. 21) that "the transfer pricing technique should not impede performance evaluation. Especially, the technique should not

allow manipulation or cause distortion of profits or costs in either segment involved with the transfer, thereby creating the illusion of better or worse performance than has actually occurred". Eccles (1983) describes the situation, after a large scale investigation: "transfer pricing is useless unless unit managers feel they are being treated fairly while top management retains control". The structure of an MNE, whether it was a centralized or decentralized control system, greatly affects ITP policy. Such effects are mainly due to the potential evaluation distortions of the managers. Ninety percent of Asian international direct investment took the form of joint ventures and granted considerable autonomy to their managers. Therefore, ITP practices are normally refused by the local managers in order to receive a fair performance evaluation. On the other hand, the external factors, such as taxes, greatly influence ITP manipulation for the purpose of profit maximization.

Benke and Don Edwards (1980) classified decentralized affiliates into three different groups: profit centers, cost centers and pseudo-profit centers. If an affiliate is a profit center, the managers of that affiliate would prefer underpricing when it receives services or overpricing when it supplies services. In a cost center, ITP is normally based on cost; managers are only responsible for the costs incurred under their supervision. Unless ITP affect performance evaluation based on the actual costs, the affiliate normally does not care too much as to specific ITP practices. The pseudo-profit center is quite similar to the cost center. Since the use of these centers (in relation to high autonomy affiliates), managers give special attention to the evaluation of these affiliates. Therefore, ITP policies should consider the performance evaluation factor. The most important motivation of performance evaluation for ITP manipulation is for the profit center affiliates. In many AP countries, most of the foreign joint ventures are treated as profit centers; many managers in these enterprises are beginning to be concerned with ITP practices in order to be evaluated "fairly". However, a considerable amount of investments are still in the form of cost centers. Many vertically integrated manufacturing affiliates located in the AP area are aimed not at local sales, but rather at reducing production costs by gaining access to low cost labor. They are mostly cost center cases. For example, in southern China, many toy manufacturing companies represent the investments of Hong Kong manufacturers. Such investments are aimed at re-export from China. They are more cost than sales oriented.

In some cases, we cannot over-emphasize the impact of the determination of performance evaluation by ITP. As fundamental firm theory states, the paramount task of any economic entity is to "make a profit". We cannot imagine an MNE paying a higher tax (thus reducing cash flow) in order to satisfy the manager of a "profit center". As a whole, the performance evaluation of an affiliate does not produce any positive cash flow for the firm. We cannot say "we have such a policy on performance evaluation, therefore, we must have such a policy on ITP" (Benke and Don Edwards, 1980). But we might say "we have such a policy on ITP, therefore we must have such a policy on performance evaluation".

The performance evaluation determinant proponents consider evaluation as an *ex ante* variable for ITP policy. In fact, it is an *ex post* action. The most important point against the previous argument is that a manager should not lose the profitability opportunities of ITP manipulation by insisting on a better performance appraisal.

Table 1. The criteria commonly used for the evaluation of foreign operations

| Divisional-Profit Related (ITP effected) | Non-divisional-profit Related (ITP non-effected) |
|--|--|
| 1. Profit | 1. Sales in Monetary or Physical Terms |
| 2. Contribution Margin | 2. Market Share |
| 3. Contribution To Consolidated Profits | 3. Market Penetration |
| 4. Return on Investment (ROI) | 4. Productivity Improvements |
| 5. Return on Assets (ROA) | 5. Compliance |
| 6. Return on Sales (ROS) | 6. Community Relations |
| 7. Residual Income | 7. Employee Moral |
| | 8. Employee Turnover |
| | 9. Training and Education of Employees |
| | 10. Executive turnover |

Source: Peter Holzer (1984), *International Accounting* New York: Harper & Row. Compiled by the authors.

Furthermore, performance evaluation is not based only on the reported profit figure. Yunker (1982) found that MNEs normally apply multiple criteria to evaluate their affiliates. Profit is an important factor, but sales, cost reductions, market share, budget goal meeting, etc., are also important. She found that if MNEs manipulate ITP, the non-profit-oriented performance evaluations are used more frequently. The most commonly used criteria in evaluating the affiliates are given in Table 1.

Table 1 lists the criteria commonly used to evaluate foreign operations. The divisional profit-related criteria are affected by ITP manipulations, but non-divisional-profit related criteria are not affected by ITP policy. With the profit-related criteria, the question is how accounting can correct or adjust for the effects of ITP manipulations in order to have a "fair" evaluation of the affiliates. In the AP region, external factors largely determine ITP policy. The accounting reports based on such ITPs would inevitably distort the real performance of the affiliates. Therefore, after the ITP practice is applied, accounting reports can be modified for internal evaluation purposes. It is also possible for the MNE or its related affiliates to use two sets of accounting records: one to record the "fair" ITP for management evaluation purposes, another to use for external reporting and tax reporting purposes. In this way, an MNE can optimize its ITP policy without manipulating its records to reach internal management decisions. (For more discussion of this issue see next section.)

Income Smoothing

In the AP area, accounting for consolidations is quite loosely regulated. Until 1975, Japan did not require consolidations. An MNE could exclude some of the "unfit" affiliates and "dump" all of the losses of the group to those affiliates. In relation to this, a "smoothed" income could be reported through ITP manipulations. In evaluating a firm's performance, a host government should notice that "smoothed" income is one of many important factors. The market, investors, and the partners of a joint venture would be happy to see a smooth and steadily increasing "bottom line". ITP manipulation adds one more method to accounting techniques to do so. Of course, when making ITP practice decisions, the relevant participants must foresee (or forecast) the operating results with and without ITP practices. An underpriced or overpriced service transfer can greatly change the variance of the reported profit across periods. Tang (1979) has found certain cases in Japan which used ITP to smooth incomes.

Off Balance Sheet Financing

Ever since the “Positive Accounting Theory” (Watts and Zimmerman, 1986) was advanced, the effects of contracting variables, particularly finance contracting variables, have drawn considerable attention to accounting reports. If an affiliate has borrowed publicly without the full guarantee of the other member of the MNEs, the MNE can underprice the transfers to the affiliates to increase the reported profit of that affiliate. As a consequence, the Debt/Equity (D/E) ratio can be artificially raised in order to prevent the violation of debt covenants, loan agreements, or a call for bankruptcy. Normally, such manipulations can be done by accounting techniques. ITP manipulation may join these accounting techniques to form a kind of manipulative portfolio. This is also very significant in a country such as China. As we know, many foreign joint venture in China rely on Chinese banks to provide short-term financing. Therefore, a profitable and low D/E ratio can assist in borrowing funds at a lower cost or a better term. In Japan, it is even more important to prevent the capital market from detecting breaches of certain accounting profit related criteria. The ITP in an MNE can help generate desired ratios in such a situation.

Avoidance of Scrutinization

A desired ITP practice should not attract too much attention from the relevant authorities. Watts and Zimmerman (1986) described the political cost of accounting as the cost incurred to divert attention from relevant authorities. An abnormally high profit can draw attention from anti-trust organizations, tax authorities, the media, etc. To reduce the political cost, an *ex ante* action can be taken to reduce the profit reported by the relevant member of the MNE. Similarly, ITP policy should be relatively consistent throughout time. Different prices of services transferred can draw the attention of custom officials and income tax authorities. The result of such attention should be closely monitored and changes in pricing practices should be required. Consequently, the MNE as a whole must incur higher tax expenses or other counter-attention costs. Overzealous efforts to minimize import duties and taxes may result in short-run gains but long-run losses.

In summary, ITP manipulation is the result of the exploitation of the related country environmental differences and internal management considerations. The existing environments in AP countries are conducive to sustaining manipulative ITP practices. With the use of accounting techniques, ITP can be an important factor in this area.

3. Disadvantages of ITP Manipulations for Host Countries

Many believe it is to the advantage of MNEs' investors and to the disadvantage of host governments or state corporations to allow ITP manipulations. The cost of the problematic ITP practices to the host government may be great.

Specifically, the possible costs of ITP practice to the host countries (often LDCs) include:

- (1) *Tax losses*: Often, the host country government offers tax reductions to foreign investors. The by-product of such a tax benefit is to encourage ITP manipulation. The result is that the host government not only reduces the tax revenue imposed on corporate income, import duties, and withholding taxes, but also loses the tax revenue on the part of the profit or loss artificially reduced by ITPs. From the MNEs' point of view, they might reach investment decision based not only on the tax advantages of reduced profits, but also on the possible tax benefits of ITP manipulations (when $TS + IDS - WTS$ is positive). This amount is a net loss to the local government due to ITP practices.
- (2) *Difficulty in auditing and evaluating firms*: If ITP manipulations are used, the companies' operating and financial results are distorted (as shown in Appendix 2). To evaluate and audit the financial reports, the local government must attempt to identify and adjust for the effects of ITPs. This can be very inefficient and costly. Sometimes, it is impossible for the local government to obtain the "real picture" of the activities of foreign related enterprises. This is certainly a disadvantage to the host country.
- (3) *Monopolized market*: An MNE can use ITP to protect its monopoly position as a supplier. Often, a joint venture needs some components or parts from the parent companies. The parent company therefore can manipulate ITP to keep its monopoly position as a supplier. When there is no competition, the supplier can overprice ITP. As soon as a competitor appears, the parent can supply the service by underpricing ITP. As many Asian countries, such as China, are very concerned with the so-called "local content" of products produced by joint ventures or foreign firms, ITP manipulations can be one of the means to delay such a nationalized "content". For example, if the local suppliers of certain parts are still uncompetitive, ITP for parts can be set high. But as soon as the local suppliers become competitive, ITP can be adjusted to a lower level to delay the local purchase of the parts.
- (4) *Difficulty in entering the international market*: Due to the problems of the balance of payments, many host governments encourage the export of the products produced by joint ventures. However, the export of those products can seriously destroy the existing world market of MNEs. Therefore, an MNE can use ITP manipulations to raise the cost artificially to delay or reduce the competitive position of its own affiliates and protect its own market share outside the host country.

These are the disadvantages considered by local governments. Plasschaert (1985) has discussed ITP problems in developing countries. He affirmed the claim that ITP problems loom larger in typical LDCs than in DCs. Thus many LDC governments try very hard to prevent ITP manipulations. The consequence is a negative influence on international transactions and a worsening of the balance of payments. The broader and longer views are suppressed by the short-run policy – attempting to avoid ITP manipulations.³

In fact, host governments themselves created environments for ITP actions. ITP manipulations cannot be attributed only to MNEs. For example, local governments

can release, to some extent, currency-exchange controls or profit repatriation restrictions. Therefore ITP manipulations might be reduced. This has been, to a certain degree, demonstrated by the Chinese government.⁴ In the AP area, the majority of countries are LDCs. Instead of forbidding ITP manipulations completely, these countries' governments must first improve their environments for ITP manipulations and provide a fair competitive environment for the supply and demand of the transferred services. Only then can ITP manipulations be limited to a somewhat lower level.

Based on a consideration of the disadvantages, however, many Asian countries started imposing strict control over ITP practices. It took more than a decade for the Chinese government to adjust its policy. At the beginning, they simply imposed a single, planned price for most transferred products. Many goods transferred had to pass the scrutiny of the customs and local tax bureaus. Administrative orders were more dominant than market forces. As a consequence, many investors were frightened away by the lengthy and complicated bureaucratic procedures. The Chinese government has gradually introduced a new economic mechanism into this field. Most joint ventures contracted to have flexibility in electing suppliers. The profit repatriation restriction was eliminated. The recent 26 percent devaluation of the RMB takes the currency a step closer to a free currency.

4. ITP Methods

Many accounting researchers and authorities considered the discussion as to which ITP basis is the most appropriate one. Most authors (Benke and Don Edwards, 1980; Plasschaert, 1985) described the "fair" ITP as an "arm's length price". This principle states that a same price should be charged to the associated entity as the one between unrelated parties for the same transactions under similar circumstances. However, a consensus has never been reached as to what is the "arm's length price". After analyzing the above motivators for ITP manipulations, we can see that without a specific regulation as to the basis for ITP, any firm could always find a best reason for its choice.

One of the existing official reports on possible "arm's length price" was prepared by the OECD in 1979. In this report, three methods were identified as the most popular. They are the comparable uncontrollable price, the resale price, and the cost-plus method.

- (1) The comparable uncontrollable price is appropriate where one can verify independent parties in similar circumstances who are trading in the same or very similar goods and where their price is readily ascertainable. This method is appropriate only where there is free market price information, there are completely comparable goods existing in the market, and the affiliates have the freedom to select suppliers. Unfortunately, in many AP countries, the market is not so efficient and perfect, and the prices are frequently subject to governmental controls or administrative interventions. Under these circumstances, appropriate price information can only be derived from the home markets of the parent companies.⁵

(2) The resale price method can be used when there is no related comparable market. This procedure begins with the price at which the goods have been or will be sold from a related seller to an independent purchaser. That is the price at which the goods finally leave the MNE. This price is reduced by an appropriate mark-up representing the amount by which the seller would seek to cover the firm's expenses and generate a reasonable profit. The main problem with this method is to find a suitable mark-up which is comparable to the mark-up an independent seller would expect to make. This will, of course, depend on the functions and risks undertaken by the seller. Some sellers expect a high mark-up because they undertake all the responsibilities of the commercial activities. Some sellers would expect a low mark-up because they are only the forwarding agents or distributors.

(3) The cost-plus method is simply the addition of a suitable mark-up on the cost (price) to the seller. This method has two disadvantages.

(a) The cost information may not be easily available and objective. First, existing cost-accounting records cannot provide an objective measure of product costs. The allocation of manufacturing overhead has been a problem. The traditional labor based rate for allocating overhead costs can greatly distort the real unit costs of products. In a modernized automated production environment, the fixed overhead costs are a large portion of the total costs. Any inappropriate allocation of overhead can cause a large variation from the real cost. Therefore, many cost measures are unreliable. For example, since many Japanese firms are still using labor-based allocation (Hiromoto, 1988), the cost information from Japanese manufacturers is partially (if not completely) inappropriate for ITP decisions. This situation is shown in Appendix 3. Second, which cost is appropriate, variable cost or full-production cost? Traditionally, many people prefer the variable cost method because it is the relevant cost to produce the service for internal transfer purposes. However, with the current large investment in technology and modern production facilities, the variable cost is a smaller portion of the total cost. Therefore, it is to the suppliers' disadvantage to use the variable cost basis. Tang (1979) found that it was much more frequent that Japanese firms used the full production cost-plus method. It is understandable for high-tech Japanese MNEs to do so.

(b) As the resale price method, the mark-up method is very artificial. There are no objective criteria to judge the rationality of the mark-up.

If any authority (e.g., tax authority) requires the use of any of the above methods, both the MNEs and the tax authorities must prove the appropriateness of the application of these methods. It is a difficult if not impossible burden to do so. Some countries suggest the use of a "safe haven" method. This method indicates that the prices falling within certain "tolerable" ranges would be accepted without question. This, of course, greatly reduces the proving and adjusting work for the tax authorities. But in reality, the prices within that country would be always at the ceilings of the range, either the top or bottom ceiling, depending on the tax rate the other dealers are subject to and internal and external factors. However, this method would be better if the proper "tolerable" range can be found.

Table 2. The classification of over- and under-priced TP methods

| Overpricing | Underpricing |
|--|--|
| Market Price | Actual Unit Variable Cost Plus Fixed Mark-up |
| Adjusted Market Price | Standard Unit Variable Cost Plus Fixed Mark-up |
| Negotiated Price | Actual Unit Full Cost |
| Actual Unit Full Cost Plus Fixed Mark-up | Standard Unit Full Cost |
| Standard Unit Full Cost Plus Fixed Mark-up | Actual Unit Variable Cost |
| | Standard Unit Variable Cost |
| | Marginal Cost |
| | Free Transfer |

P. Yunker (1982), *Transfer Pricing and Performance Evaluation in Multinational Corporations: a Survey Study*, New York: Praeger. Summarized by the authors.

In summary, Table 2 reclassifies different ITP methods into over- or underpricing categories. Most of the underpricing methods are based on cost information.

In Asian countries, no single ITP method has yet been adopted. Lecraw (1985) investigated ITP in five Asian countries: Thailand, Malaysia, Singapore, Indonesia, and the Philippines. He found that intra-firm transactions tended to be at prices that were generally nonmarket based, while prices for transactions with unrelated firms were generally priced in relation to market prices or full costs. Tang (1979) found in his Japanese sample that 37 of 63 firms (58.7 percent) used non-cost-oriented methods for international transfer while 26 of 63 firms (41.3 percent) used cost-oriented methods. He further found that for international transfer prices, large Japanese firms more often used non-cost-oriented methods than small firms (the relationship is significant at the 1 percent level). In China, the tax authorities and the government normally require the cost-oriented method (cost-plus) without specifying which cost method is valid and which mark-up is proper. There is no market price available to which the authorities may refer, so they always judge the appropriateness of the ITP based on the "reported" cost. Most AP countries use similar cost-plus methods. If a consensus is needed, the cost-plus method might be preferred by most AP countries, with the exception of Japan, which might prefer the non-cost-oriented method.

5. Tax Harmonization Among AP Countries

Historically, AP countries have never sought to harmonize tax procedures. As the world divides into regional geographic and economic areas and economic relations among AP countries intensify,⁶ the search for harmonization could be necessary. The most effective way to reduce ITP manipulation is to keep the tax rates in each country aligned with those of other countries. To do so, a harmonized taxation system between countries is very important to avoid conflicts.

The first step to tax harmonization would be to establish an agreement on double taxation issue. An agreement on the appropriate avoidance of double taxation could greatly reduce the dispute over taxable profits which otherwise might be taxed in both the home and host countries. However, this can reduce the investors' incentive to invest in host countries. Some initiatives have been taken in the AP area. For example, in 1984, China reached an agreement with Japan on the avoidance of double taxation. Such a treaty can greatly reduce the dispute over the taxable income

for the investors. Another issue for tax harmonization is to avoid the continuous tax. The purpose of a tax benefit given by LDCs (host government) is to encourage investment inflow. If the profit in the host country is continuously taxed, the tax benefit goes to the home government. This would counteract the host government's intention. For example, Japanese firms investing in the Special Economic Zones (SEZ) in China enjoy a 15 percent income tax rate. However, if their profits are consolidated, an additional 25 percent (the difference between 15 percent of the tax rate in China and the 40 percent tax rate in Japan) is taxed by Japanese tax authorities. The tax benefit of the investors are therefore shifted to the Japanese government and the investors lose their tax incentive. This is the so-called "Tax Credit Method". This kind of tax practice can only harm the host governments. It should be avoided if the host country does not really protect its capital outflow. Japan, Malaysia, and Singapore use such a tax credit method.

In such situations, the effect of tax incentives given by host authorities (mostly LDCs) can only be attractive with the corporation of the host tax authority. Article 23(4) of the Tax Treaty between China and Japan indicates that the amount of special tax reduction (benefits to Japanese investors) in China should be included in the amount of tax credits to Japan. This treaty therefore protects the tax incentives going to the appropriate investors, not the governments. However, the effect of such "tax harmonization" could encourage ITP manipulations. Lower tax rates in home countries protected by tax agreements also encourage the underpricing of the transfers.

As double taxation agreements are reached, it should not be difficult to harmonize the wider scale of taxation multilaterally in the AP area. The second OECD report on ITP, issued in 1984 as an amendment to the 1979 report, attempted to harmonize the taxes within OECD countries. The EEC has also been trying to harmonize the taxation systems of its member states, but until now, it is still incomplete.

In AP countries, the tax harmonization process may not be easy. The most severe problem is that the GNP levels of countries in the AP area vary greatly and the LDCs are determined to use tax benefits as attractions to foreign investors. If the process within the OECD and the EEC (where the economic levels are less extreme between countries) is difficult, the process in the AP area will also be difficult.

As long as tax harmonization can not soon be achieved, and LDCs offer more and more tax benefits to DCs, ITP manipulations are and will become very popular. Probably it will become an obstacle affecting the countries' trade relationships in the AP area. Of course, each country under such a situation will try to amend its tax laws to prevent ITP manipulations. For example, Japan in Article 132, paragraph 1, of its corporate tax law includes restrictions on ITP manipulations; the only allowable method is called "arm's length price" which could include large variances between each "arm's length price" (as discussed in the last section).

It is not difficult to say an arm's length price is allowed. But to decide which "arm's length price", each country will have its own choice. It might be easier if, instead of harmonizing tax rate, the AP area would first harmonize the requirements relating to ITP issues. With such a process, the tax attractions of LDCs are protected and ITP manipulations might be greatly reduced.

On April 1, 1986, Japan imposed new inter-company pricing rules which clarify: (1) three methods as "arm's length price": comparable uncontrollable price, resale

price, and cost-plus method; and (2) the needs for information exchange across country tax authorities. In December 1988, Korea imposed a similar regulation. In 1988, a Chinese SEZ, Shenzhen, also introduced a transfer pricing rule into its local tax law. In April 1991, the new Chinese tax law on foreign joint ventures and foreign firms stipulates in Article 13 that the transfer pricing method should be an arm's length price, and tax authorities have the right to judge the fairness of the ITP. Thailand included ITP rules in Section 65 of its Revenue Code. Except for the three "arm's length price" methods, the Thai Code further specifies that assessment officers have the power to establish the cost prices of the transfers. However, whatever efforts were made, it is difficult in practice since the world cost (prices) are non-unique and generally they are subject to dispute as we discussed previously.

Finally, concerning tax harmonization, we can not avoid the possible differences in accounting regulations. An example is the process to decide the "cost" of the cost-plus method. There are marginal costs, variable costs, standard costs, replacement costs, and full costs. Of these, full costs and variable costs are preferable. For full costs, the allocation of the manufacturing costs can be very different depending on the amount and the method of allocation of manufacturing overhead. Tax authorities must decide which method of allocation is more appropriate. This will be discussed in the next section. Most important is that there is a strong relationship between tax regulations and accounting regulations.

6. Accounting Issues in Relating to ITP

Cost Allocation

Since traditional variable costs are defined as varying with production in the short term, that long term variable costs (short term deemed as "fixed") are excluded from variable costs is dubious. This is why many ITP regulators prefer the full cost-plus method. However, in most modern innovative manufacturing companies, overhead is very high. The allocation basis of the overhead is a very important factor for the full cost method.⁷

In Japan, the full cost, particularly the traditional "labor-based" allocation of overhead costs, is generally used. Changes in such cost systems can be adjusted by the specific ITP regulation. In China, as many other AP countries, the cost accounting system was very different. Cost classification and reallocation are completely artificial. The "prudence" concept for unrealized costs is not recognized. The accurate determination of real product unit cost was relatively low.⁸ Unit cost in China is largely based on "planned" cost items. Therefore, it is very unreliable to use cost data in many AP countries to judge ITP practices. One of the main possibilities is to harmonize related cost accounting systems. Thereby each country can judge the "fairness" of ITP. In the short run, the full-cost plus method might be favored by Japan, Taiwan, South Korea, Singapore, and Hong Kong. The other LDCs might prefer the variable cost-plus method because their overhead costs might be lower. A harmonization of ITP might depend on the possible harmonization of accounting regulations.

Segment Reporting and Performance Evaluation

We mentioned previously that an MNE would make ITP decisions based primarily on global profit maximization. Therefore, segment reports on each division or subsidiary must be adjusted. Accounting records and analysis need certain modification for internal decision purposes. The effects of ITP manipulations on the financial reporting results should be excluded. For example, to receive a tax exemption fully in China, a foreign MNE might greatly underprice its components transfer costs to its affiliate in China. Performance results of its Chinese affiliate are better than they should be without the ITP manipulations.

One solution to such a confusing situation is to use two sets of recording systems (or the so-called dual pricing system). One set records information for external reports and tax purposes based on “actual” ITP. Another set can be used for evaluation purposes based on an internal agreeable “fair” price. Such an internal “fair” price can refer to other comparable sales or transactions. The second record might be difficult to obtain by external users. This method, however, has been challenged in terms of its efficiency and practical value. Not many firms would invest energy in such a “slight” manipulation.⁹

Of course, an MNE can also adopt an *ex post* adjustment method to restore the effects of over/under pricing of ITP. Such an adjustment might be difficult so long as there is no “fair” price. One other possibility is to harmonize accounting practices. Rahman (1987) has noted that a standard accounting system can aid greatly in performance evaluation; for example, most of the AP countries lack of accounting standards and the shortcomings of government authorities to control ITPs. Therefore, declared profits of the MNE in these countries can be of limited use in evaluating the performance of these enterprises.

In summary, ITP manipulation greatly increases the burden of accounting information analysis. An MNE should adjust its effects of ITP manipulations to ensure a “fair” performance evaluation of its affiliate. Such an accounting adjustment might be new to many AP countries.

Consolidation Accounting

Until 1975, there was no mandatory requirement for consolidated financial reporting in Japan. Most of the AP countries still have not imposed such requirements. However, for any MNE, the consolidated accounts are one of the most important financial reports in evaluating the global performance of the MNE. The effect of ITP (for intra-firm transactions) can be eliminated by proper consolidation skill.

Different ITP methods can result in different figures in the profit and loss (P&L) accounts (Appendix 2) of both suppliers and buyers within the group (MNE). Without the elimination of the intra-firm transactions, the evaluation of the individual members of the group based on their non-consolidated reports would be biased. The P&L accounts would yield an inaccurate operations result. The consolidation reports can eliminate a great part of ITP effects and, in fact, are a way to reduce the motivations of ITP manipulations.

The elimination of ITP effects should be one of the important tasks of consolidation. Many international accounting bodies overlooked this issue. The EEC 7th Directive (1983) does not include a clear requirement to eliminate for ITP. If there is a possibility of harmonizing consolidation accounting in the AP area, ITP effects should probably be considered.

Auditing

Auditing practices are also another way to detect ITP manipulations. The problem is that without a consensus among related parties, the auditing of MNEs can create many problems. One of the main issues is the independent status of an auditor. For example, in China, the auditing activities of an MNE are required to be performed by a Chinese CPA. The CPAs in China are personnel of the Ministry of Finance. Since most of the joint ventures in China are between foreign MNEs and the Chinese government, many complaints came from the foreign partners as to the independent status of the Chinese auditors. This implies that Chinese auditors are biased in favor of the Chinese government. Recently, the Chinese government allowed auditors of foreign accounting firms to perform “joint auditing” with Chinese auditors. This action can reduce many of the controversies over the issue.

However, as far as ITP manipulations are concerned, the auditors are mainly concerned to detect tax fraud. In the absence of the tax and accounting harmonization, the tax authorities might audit the foreign affiliates' accounts very strictly, therefore, some controversies would arise as to the financial reporting practices used for ITP for intra-company transaction. Thus it is also necessary to encourage an auditing harmonization process. The harmonization of taxation, accounting, and auditing regulations are the inter-related process concerning regulated ITP practices. The process in the AP area can take international harmonization advances into consideration. Various organizations have published pronouncements aimed at a greater standardization of accounting practices of MNEs throughout the world. These include the United Nations Commission on Transnational Corporations (UN), the Organization for Economic Cooperation and Development (OECD), the European Economic Community (EEC), and the International Accounting Standards Committee (IASC). By referring to these developments, the AP countries might improve their investment and economic climates.

7. Conclusion and Further Research Suggestions

The existing environments in AP countries can sustain considerable international ITP manipulations. Owing to tax differences, import duties, withholding taxes, currency risks, and profit repatriation restrictions, an MNE in the AP area can use ITP to best exploit these factors if it aims to maximize global profits.

Performance evaluation is a secondary consideration in an ITP decision. The relevant question is, given an ITP practice, how managers can evaluate the affected affiliates' performance. The performance evaluation occurs *ex post*. However, since most of the foreign direct investments in Asia take the form of joint ventures, to

give a "fair" performance evaluation is very critical for cooperation. Such a "fair" evaluation largely depends on the accounting correction of the effects of ITPs.

It is also possible that in order to reduce the contractual costs and political costs, a MNE use ITP manipulations to adjust its financial position. This determination is further classified into such motivations as: income smoothing, off-balance-sheet financing, and avoidance of scrutinization.

Facing such a situation, both the investors and investees should cooperate to resolve ITP problems. It is certainly not to the advantage of the LDCs in this area to accept the ITP manipulations, but there are policies issued by themselves encouraging the ITP practices. Theoretically, a compromise between different authorities and the investors might reduce the scale of ITP manipulations. The possible areas for compromising include taxation, accounting, and auditing regulations. Segment reporting, consolidation, and cost measurements are important fields for the accounting regulators to consider.

Finally, although some countries have introduced the concept of an arm's length price, as far as the specific method is concerned no single one can be considered as the dominant one. Since the market in most AP countries is not efficient and most of the transfers are unique, there are problems in using the comparable-uncontrollable method and the resale price method. The most probable method is the cost-plus method. But it is still difficult to clarify which costing method should be used and whether the cost information is accurately provided.

In summary, ITP manipulations are popular in the AP area. The regulations pertaining to taxation, accounting, and auditing need to consider such situations.

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Appendix 1: Foreign Corporate Income Tax and Withholding Tax Rates in Some AP Countries

| Countries | Corporate tax for foreign investors (%) | Withholding tax (%) ^a |
|-------------|---|----------------------------------|
| Thailand | 35.0 | 20-25 |
| Taiwan | 25.0 | 15-35 |
| Hong Kong | 16.5 | NA |
| Vietnam | 15-25 | NA |
| Malaysia | 35.0 | 20 |
| Singapore | 33.0 | 33 |
| South Korea | 30.0 | 10-20 |
| Japan | 42.0 | 20 |
| China | 33.0 | 10 |
| Philippines | 35.0 | 20 |
| Indonesia | 35.0 | 20 |

^aThe different withholding tax rates are due to the different rates for dividends and interests.

Source: *Bulletin for International Fiscal Documentation*. Vol. 44, 1990. Summarized by the authors.

Appendix 2: The Effects of TP on Performance Evaluations

Appendices 2.1 and 2.2 show the effects of different ITP policies on performance evaluation. Suppose the initial investments in two divisions are the same (each with

a \$100 000 investment). The financial results are different. With a low ITP, the income of B is \$10 000 higher than that of A. With a high ITP, there appear to be the same results for both divisions. In this case, the operation results of both divisions are distorted. If the evaluation is based on one of the three criteria, namely net income, ROI, and residual income (see Appendix 2.2), Division B has better results with the low ITP than with the high ITP, and vice versa for Division A. If Division A is evaluated based on these parameters, the managers of Division A would be strongly against the low ITP practices. However, if the divisions are centrally controlled and evaluated based on their controllable costs, the ITP manipulations in this case would not affect the evaluation.¹⁰

Appendix 2.1: The Effects of TP on Financial Reporting

Division A

| | Low TP | | | High TP | | |
|---------------------|-----------|-----------------------|----------|-----------|-----------------------|----------|
| | Product 1 | Product 2 | Total | Product 1 | Product 2 | Total |
| External sales | | \$50 000 | | | \$50 000 | |
| Sales to B | \$25 000 | | \$75 000 | \$30 000 | | \$80 000 |
| Manufacturing costs | (20 000) | (40 000) | (60 000) | (20 000) | (40 000) | (60 000) |
| Income from A | | \$10 000 ^a | \$15 000 | | \$10 000 ^a | \$20 000 |

Division B

| Product 1 | Product 3 | Total | Product 1 | Product 3 | Total | |
|---------------------|-----------|-----------------------|-----------|-----------|-----------|-----------|
| External sales | \$50 000 | \$50 000 | \$100 000 | \$50 000 | \$50 000 | \$100 000 |
| Manufacturing costs | (10 000) | (40 000) | (50 000) | (10 000) | (40 000) | (50 000) |
| Intra-TP | (25 000) | | (25 000) | (30 000) | | (30 000) |
| Income from B | | \$10 000 ^a | \$25 000 | | \$10 000* | \$20 000 |

^aThe \$10 000 is considered controllable divisional income.

Appendix 2.2: The Differences of Performance Evaluations

| Low TP | | | | |
|------------|------------|-------------------------------|----------------------------------|---|
| | Net income | ROI | Residual income | |
| Division A | \$15 000 | \$15 000 \$100 000 =15% | \$15 000 -10 000 \$5 000 | Divisional income Capital cost (assume 10%) |
| | | | | |
| | | | | |
| Division B | \$25 000 | \$25 000 \$100 000 =25% | \$25 000 -10 000 \$15 ,000 | Divisional income Capital cost |
| | | | | |
| | | | | |
| High TP | | | | |
| | Net income | ROI | Residual income | |
| Division A | \$20 000 | \$20 000 \$100 000 =20% | \$20 000 -10 ,000 \$10 000 | Divisional income Capital cost |
| | | | | |
| | | | | |
| Division B | \$20 000 | \$20 000 \$100 000 =20% | \$20 000 -10 000 \$10 000 | Divisional income Capital cost |
| | | | | |
| | | | | |

Appendix 3: The Effects of Costing System on Transfer Pricing

A case study from the Harvard Business School (1987) shows that pricing on internal transfer of components based on different costing systems can result in greatly different prices (John Deere Component Works). Appendix 3.1 illustrates how large an ITP difference could be if ITP is based on different costing methods. A difference between the “old system” (e.g., labor hour based or machine hour based) and a new costing system which is considered to be more appropriate for cost measurement purposes (e.g., activity based costing) can be as high as 30 percent. Therefore, ITP based on the “old system” deviates also 30 percent of that of the “new system.” Such a kind of deviation can greatly hamper the detection of ITP manipulations.

Appendix 3.1: The Changes of Cost System and Their Effects on TP – John Deere Case for Cost Estimates of Part A103

| | Old system ^a | ABC system ^b |
|---------------------------|-------------------------|-------------------------|
| Total material costs | \$7.07 | \$7.07 |
| Direct labor | 2.36 | 2.36 |
| Manufacturing overhead | | |
| Direct labor related | 4.48 | 2.62 |
| Machine-hour related | 8.55 | 5.15 |
| Setup | — | 3.55 |
| Production order | — | 2.86 |
| Material handling | — | 0.97 |
| Parts administration | — | 6.09 |
| General administration | — | 2.15 |
| Total unit cost | \$22.82 | \$32.82 |
| Cost difference | | \$10.00 |
| TP based on 20% Cost-plus | \$27.38 | \$39.38 |
| TP difference | | \$12.00 |

TP based on old system: $\$22.82 \times (1+20\% \text{ mark up}) = \27.38 .

TP based on ABC System: $\$32.82 \times (1+20\% \text{ mark up}) = \39.38 .

^aOld System: allocating overhead based on standard prefixed direct labor rate.

^bABC system: allocating overhead based on different correlated activities bases.

Reference: Kaplan (1988)

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Notes

1. Here, we assume that the tax benefits can go to the MNE automatically. That means, the tax exemption method is used in the home country to exempt the tax paid in the host country from the tax payable in the home country. If the tax credit method is used, the tax benefits gained from the lower tax rate country would be paid to the home authority. As seen in a later section, a bilateral or multilateral tax treaty is necessary to guarantee that the tax incentive go to the investors.
2. The indirect control includes such tactics as high withholding tax rates, barter trade requirements, and distorted official-only exchange rates.
3. For example, in April 1991, a law on foreign company taxation was passed in the People's Republic of China. Article 13 of the law specifically deals with the ITP issue.
4. Recently, a large scale of devaluation of the RMB brought the Chinese currency a step closer to the market rate. See later discussion.
5. As in China, where the government tries to combine the central planning and market powers.

6. For example, despite the political turmoil in China, the Taiwanese invested in China at a record level during 1989.
7. Things could become more complicated concerning overhead costs in the following situation: some host countries do not allow the contributions from the local subsidiaries the overhead costs (such as R&D incurred in the home country of the MNE) to be deducted from the taxable base of corporation tax in the host countries.
8. For example, in China, "gross profit" is derived after deducting "administrative expenses" from "sales revenue." The "contents" of this cost are very different conceptually from that of the other countries.
9. Mays (1982) proposed two other methods for the performance evaluation to remedy ITP practices: variance analysis and the index of negotiation. The efficiency of such methods needs further testing. However, the idea that the controllable costs should carry more weight in the evaluation is a good point.
10. For more discussion on controllable costs, see Mays (1982).

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Price–Earnings Research and the Emerging Capital Markets: The Case of Zimbabwe

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Key words: Emerging capital markets; Price-earnings research; Zimbabwe Stock Exchange

Abstract: *This paper presents the case for extending share price–accounting earnings research to small and emerging capital markets in mostly developing countries. It describes these markets and their growing importance in the economic development process and international financial markets. The paper contends that different settings and characteristics of these emerging markets offer some unique accounting research opportunities and challenges. It reports the results of an exploratory price–earnings study on one of these emerging markets, the Zimbabwe Stock Exchange. The study finds a statistically significant positive relationship between some accounting measures of profitability and share prices/returns.*

This paper attempts to present a case for adapting the research paradigm that originated from the seminal empirical work of Ball and Brown (B&B) to examine the relationship between accounting numbers and share prices on the so-called “small and emerging markets”.¹ It also reports the results of a very exploratory study that applies this research paradigm in its less sophisticated form to the Zimbabwe Stock Exchange (ZSE), one of the several small and emerging capital markets.

The second section of the paper describes the emerging markets and the potential usefulness of accounting information in the formation of share prices in these markets. In the third section a case is made for the adaptation of B&B’s research paradigm to these markets, including a discussion of some of the potential problems and payoffs. The results of a study that applied B&B’s paradigm to the ZSE are presented and discussed in the fourth section. Some concluding comments are offered in the last section.

Emerging Capital Markets

Emerging capital markets are equity markets in a small group of developing countries which are gradually becoming a part of the established international financial markets.² These markets are very small by the standards of Wall Street, London, and Tokyo. Their market capitalizations at the end of 1988 ranged from \$120.017 billion for Taiwan to between \$0.25 and \$1 billion for countries such as Indonesia, Trinidad and Tobago, Kenya, Morocco, Zimbabwe, Jamaica, and Nigeria. Some of the bigger ones (for example, Taiwan, Brazil, Malaysia, India, Korea, and Mexico), however, compare favorably with the smaller matured and developed markets such as Hong Kong, Finland, and Denmark.³

The emerging capital markets are growing rapidly to mobilize substantial amounts of capital, both local and foreign, to push forward industrialization. During the five-year period ended December 1988, the market capitalization of a group of 30 of these emerging markets rose by nearly 500 percent to \$378 billion, while the total value traded increased by a factor of 16 in US dollar terms. The share of these emerging markets' capitalization as a part of the total global capitalization rose from 2.5 percent at the end of 1983 to 4 percent at the end of 1988. Over the same period, the number of companies listed in these developing markets increased 63 percent to nearly 11 000.⁴

The International Finance Corporation (IFC), a development institution and an arm of the World Bank, has been (and continues to be) actively involved in the development of the emerging markets. It offers policy advice on developing these markets, maintains a computerized data bank (the Emerging Financial Markets Database) of the top 17 emerging markets with detailed information on the most actively traded stocks and promotes them for foreign portfolio investment through several funds, such as the Emerging Markets Growth Fund and country funds.⁵ The IFC's active involvement in these emerging markets is predicated on the proposition that these markets have an important role to play in the economic development process: a means to accumulate local savings, raise external capital, and allocate them efficiently to productive uses. The existence of efficient equity markets in most of these countries can facilitate the growing shift from centralized planning to a market economy by providing a relatively objective basis for valuation of state-owned enterprises that are being privatized.⁶

Besides the economic development role, the emerging markets provide external investors many benefits, including the following. First, they provide a good source of diversification for international portfolio management because the correlations between their returns and the US market are close to zero and much lower than correlations between the US market and either Europe or Japan. In some cases the correlations are even negative. For example, over the 11 years to December 1986, the month-to-month returns in Argentina, Chile, Greece, Mexico, Thailand and Zimbabwe were negatively correlated with the S&P 500. Second, the potential returns are very attractive. For example, since the end of 1986, seven of the 11 emerging markets have outperformed the S&P's 500. Finally, there are good values in these markets. The price/earnings ratios of many of the stocks on these markets are much lower compared to their rich-country counterparts and, therefore, may be attractive

to investors who use such classic techniques to identify undervalued shares. External financial analysts have a comparative advantage over indigenous analysts who generally do not have expertise in modern investment techniques and security analysis.⁷

Through the activities of the IFC the emerging markets are beginning to attract international investors. Potential international investors are likely to face many problems in investing in these markets. The potential problems include liquidity, investment restrictions, tax barriers, political risk, and less than adequate standards (compared to the United States) of disclosure, accounting, and information.

The problem of less than adequate standards of disclosure of information, both financial and non-financial, in most of the emerging markets is of particular relevance to the theme of this paper. Not only can this problem be a barrier to much needed foreign investment in local companies but it also can cause the inefficient allocation of resources. However, there is some optimism that the situation can only improve for several reasons. First, as mentioned earlier, the IFC has developed a database with consistent and regularly updated information of companies listed on these emerging markets and is beginning to sell access to it to outsiders. Second, indigenous brokers are increasingly providing stock reports and even some international brokerage houses now cover some of these markets. Third, many of the major emerging markets have securities legislation often patterned after the laws governing some of the big matured markets. Fourth, while the quality of external reports of most of the companies listed on the emerging markets is definitely not comparable to that of companies listed on the major North American and British capital markets, it is comparable to that of many companies listed in Europe and Japan. Many companies quoted on the major emerging markets are audited by large multinational accounting firms. Finally, as the demand by local investors for more and reliable information of listed companies continues to increase, very few companies can afford not to provide full and reliable disclosure of relevant financial and non-financial information.

The Case for Share Price-Earnings Research on Emerging Markets

The seminal work of B&B, followed by that of Beaver, documented a convincing statistical association between accounting numbers (earnings in particular) and share prices.⁸ Until then the conventional wisdom was that accounting practice was little more than a mere ritual. This earlier work set in motion a program of accounting research that has examined every conceivable aspect of the share price earnings relationship. This research paradigm has had impact beyond the United States as Brown indicates:⁹

Since 1968 this line of research has spread to New Zealand, Canada, the United Kingdom, Europe, and Singapore. I have little doubt that somewhere in the Soviet Union, there is a researcher hoping that *perestroika* will extend to the introduction of a capital market and that one day he will be able to relate share prices to published accounting reports in the USSR.

Notwithstanding the large volume of research on the price-earnings relationship on matured capital markets, especially the New York Stock Exchange, the usefulness of accounting numbers, in terms of their explanatory power of stock returns, is still questionable:¹⁰

The returns/earnings research evidence suggests that while earnings appear to be used by investors, the extent of earnings usefulness is rather limited. This is indicated by the weak and intertemporally unstable contemporaneous correlation between stock returns and earnings and by the very modest contribution of earnings to the prediction of stock prices and returns.

The primary reason (motivation) that has driven accounting research on price-earnings relationships on matured capital markets is knowledge or curiosity, specifically, the role (if any) of accounting information in the assessment of expected returns and risk of securities of firms listed on these markets. This reason definitely is equally applicable to accounting research on small and emerging markets.

The emerging markets offer some unique research opportunities. Their market settings tend to be quite different from those of matured markets and may offer new insights into the role of accounting information in assessing returns and risk. Some aspects of the market settings are favorable to accounting research while other aspects pose additional problems in research methodology. At least two observations can be made on the favorable aspects.¹¹ First, financial statements information is likely to be better in explaining a firm's returns because it competes with very few, if any, sources. In almost all the small and emerging markets, competing sources for firm-specific financial information, such as the availability of stock reports and investment advisory services, are not plentiful. Published financial statements, in relative terms, are, however, readily available and may constitute the only major source of official firm-specific financial information. Thus, if any information has the potential of being reflected in share prices, it is likely to be reported as financial statements information. Second, experimental design problems, such as sample size and selection criteria, may be less severe. In most cases all the listed firms (the population) will constitute the sample for the study because the number of listed firms tends to be quite small. This feature will most likely enhance the external validity of the research results.

There are several problems that price-earnings research on the emerging markets face. First, the lack of comprehensive CRSP and Compustat equivalent databases will limit the types of research studies that can be undertaken.¹² Second, trading in most of the stocks listed on the emerging markets is thin, and therefore, the conventional market model used to isolate unexpected returns will need to be modified. Finally, the informational efficiency of most of the emerging markets cannot be taken for granted. If anything one may have to assume otherwise, that is, market inefficiency. Besides potential informational inefficiency, most of the emerging markets are likely to be also less efficient operationally. They are less elaborately organized, both technically and in terms of manpower. Therefore information about listed shares may spread only gradually through the financial community.

Price-Earnings Research on the Zimbabwe Stock Exchange

This section of the paper reports the results of an exploratory study on the statistical relationship between a set of accounting measures of profitability and share prices of firms listed on the ZSE, a small and emerging capital market.¹³ The ZSE is characterized by relatively low levels of trading activity, turnover, market capitalization, and reporting effectiveness that are substantially lower than what one would typically expect even on other small and emerging markets. It ranks among the lowest in all categories of reporting effectiveness, such as availability of stock reports, disclosure, and investment advisory services.¹⁴ The quality of financial statement reporting by firms listed on the ZSE is, however, quite good.¹⁵ Listed companies publish in the local press half and full-year results of their operations. Financial statements of most of these firms are audited by the big multinational accounting firms.

The results reported here are based on the entire population of 47 industrial companies listed on the ZSE. The main source of financial statement data for the analysis is the 1986 Financial Gazette Top Companies Survey published as a supplement to the August 8, 1986 issue of Financial Gazette.¹⁶ The financial statement data cover a full fiscal year (between 1985 and 1986) for each firm. The share price data were obtained from Quarterly Price Data published by the ZSE.¹⁷

The following four variables were selected as accounting measures of a firm's profitability: changes in (i) earnings per share (EPS); (ii) dividend per share (DPS); (iii) ratio of net income after tax (NIAT) to turnover (sales); and (iv) return on net assets. A Spearman rank correlation coefficient was computed for each of the four variables paired with each of two market-determined measures of profitability, namely unadjusted and adjusted (for dividends) changes in share price for 12 and 15-month periods. The 12-month price change was measured from the beginning to the end of the firm's fiscal year while the 15-month price change was measured from the beginning to three months after its fiscal year-end. The 15-month computation was done to allow for sufficient time between fiscal year-end and the release of preliminary annual earnings information. All the 47 firms had released their preliminary annual earnings information to the local press (and in several cases the actual official annual report) by the end of the third month after their fiscal year-ends.

The results of the rank correlation analysis are presented in Table 1 below. They indicate a statistically significant positive relationship between each of the accounting measures of profitability and each of the market-determined measures of profitability. The accounting measure with the highest positive correlation is the change in EPS. In all cases, except for the change in DPS, the correlation coefficient based on a 15-month period share price change is higher than that based on a 12-month period.

Similarly, the correlation coefficients improved in each case when price changes were adjusted for dividends. The magnitudes of these correlation coefficients and their levels of statistical significance are at least comparable to those reported in more sophisticated market settings.¹⁸ These results are quite impressive given the

Table 1. Results of correlation analysis

| | Spearman rank correlation coefficients | | | |
|------------------------------|--|-------------------|--|-------------------|
| | Change in share price | | Change in share price (dividend adjusted) | |
| | 12 months | 15 months | 12 months | 15 months |
| Change in: | | | | |
| EPS | 0.5091 (0.001) ^a | 0.6296 (0.001) | 0.5538 (0.001) | 0.6326 (0.001) |
| DPS | 0.2865 (0.025) | 0.3776 (0.004) | 0.4438 (0.001) | 0.4225 (0.002) |
| Ratio of N1AT to turnover | 0.4386 (0.001) | 0.5839 (0.001) | 0.4813 (0.001) | 0.5838 (0.001) |
| Return on net asset | 0.4789 (0.001) | 0.6212 (0.001) | 0.5309 (0.001) | 0.6229 (0.001) |

^a Numbers in parentheses indicate levels of statistical significance.

reservations made earlier regarding the efficiency of most small and emerging markets. They also tend to emphasize the relative importance of financial statement data in price formation in these markets. But as such findings elsewhere, the relationship between share price and financial statement data is not a simple one-to-one (that is, the correlation coefficients are less than one) because of the existence of other factors which impact on share prices.

Concluding Remarks

The small and emerging capital markets will continue to attract the attention of international investors. This process can be facilitated if there are adequate standards of disclosure of information to ensure that resources are efficiently allocated in these markets. Financial statements constitute one major source of information in these markets that can facilitate this process. The preliminary results indicating a positive relationship between changes in share price and changes in accounting measures of profitability reported here would seem to suggest that financial statements information is useful to investors in one of these emerging markets. These results are, however, based on a study with several limitations. For example, because of the lack of data, the study was limited to only a 15-month period and market-wide effects could not be removed from the share prices. The study's conclusions are therefore likely to be less reliable. Notwithstanding such limitations, the results are significant in view of the the growing interests of the world financial community in the integration of these so-called emerging markets with the international financial marketplace as well as important mechanisms for handling the needs of corporate finance and privatization of state-owned enterprises.

References and Notes

1. Ray Ball and P. Brown. "An Empirical Evaluation of Accounting Income Numbers." *Journal of Accounting Research* (Autumn 1968): 159–178. The concept of small and emerging markets is described below.

2. The concept of "emerging stock markets" is defined in relative terms; it applies to stock markets that are not fully developed. According to the International Finance Corporation (IFC) classification, developed stock markets include not only those of industrialized countries but also well-established markets in certain newly industrializing economies, such as Singapore and Hong Kong; countries with emerging markets are, however, mainly developing countries, but also include, for example, Greece and Portugal which are now classified as industrialized countries.
3. IFC: *Emerging Stock Markets Fact Book* (1989).
4. International Monetary Fund. *International Capital Markets: Developments and Prospects* (Washington DC: IMF, April 1990).
5. Sir William S. Kyrie (Executive Vice-President, IFC). "Presentation to Conference of the Economist on Small and Emerging Markets." (London: November 21, 1986).
6. Cowan has observed that "a successful privatization program does not depend on having a stock market, as many sales to individuals and joint partnerships demonstrate". However, he admits that the existence of an active one may rapidly become a vehicle for successful privatizations which may strengthen the market itself. L. Gray Cowan. *Privatization in the Developing World* (New York: Praeger Publishers, 1990), 99.
7. "Go South, Young Man." *The Economist* (April 16, 1988), 93.
8. William H. Beaver. "The Information Content of Annual Earnings Announcements." *Journal of Accounting Research* (Supplement, 1968), 67-92. For a summary of both the theory and evidence on the relationship between earnings and share prices, see William H. Beaver. *Financial Reporting: An Accounting Revolution*. (Englewood Cliffs, NJ: Prentice-Hall, 1981).
9. Philip Brown. "Invited Remarks: Ball and Brown [1968]." *Journal of Accounting Research* (Supplement, 1989), 210.
10. Baruch Lev. "On the Usefulness of Earnings and Earnings Research: Lessons and Directions from Two Decades of Empirical Research." *Journal of Accounting Research* (Supplement, 1989), 185.
11. See Brown [9] for other research ideas resulting from globalization of capital markets.
12. The IFC Emerging Financial Markets Data Base referred to earlier is still in its infancy stage when compared to either CRSP or Compustat. It may, however, still be useful for small sample or case studies.
13. The exploratory work reported here was done while the author was a visiting lecturer at the University of Zimbabwe between 1985 and 1987.
14. The following statistics for the ZSE for 1986 support this statement: market capitalization of Z\$687.6 million; trading volume of Z\$19.6 million; and turnover of 2.85% (December 1986, Z\$1.00 = US\$0.60). The ZSE market capitalization ranks 18 in a sample of 21 emerging capital markets. In 1986 there were only two local brokerage firms which were members of the ZSE. The two firms issued weekly commentaries on information previously released officially by firms listed on the ZSE. They did not provide any analysis of the information.
15. The Institute of Chartered Accountants of Zimbabwe, the body regulating financial reporting in Zimbabwe, is a member of the International Accounting Standards Committee (IASC). The Council of the Institute has undertaken the obligation to support standards established by IASC. As of October 31, 1986, the Council had adopted all standards established by IASC with no major changes except those relating to terminology. For a detailed discussion of the appropriateness or inappropriateness of IASC standards to developing countries such as Zimbabwe, see M.R. Hove, "Accounting Practices in Developing Countries: Colonialism's Legacy of Inappropriate Technologies," *The International Journal of Accounting* (Fall 1986).
16. *The Financial Gazette* is the Zimbabwean equivalent of the *Wall Street Journal*, except that it is a weekly publication.
17. In December 1991, I learned from my former colleague, Mr T.W. Dube, a lecturer in Accounting at the University of Zimbabwe, that he was in the process of creating a comprehensive database of share prices of all firms listed on the ZSE.
18. As mentioned earlier, earnings with respect to cross-sectional variations in returns of firms listed on matured stock markets (mainly the New York Stock Exchange) has a low explanatory power. The explanatory power has been between 2% and 7% for earnings and between 5% and 7% for financial ratios such as return on equity and earnings before taxes to total assets. See Lev [10] for details.

Accounting Education in Korea: Current Trends and the Challenge for the Future

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Key words: Korea; Accounting education; Accounting practice; Five-year accounting program

Abstract: *This paper (1) briefly reviews the background of accounting education in Korea; (2) describes its objectives; (3) presents the model accounting curriculum developed by the Korea Accounting Association; and (4) discusses the two natural educational models in the context of the Bedford Committee Report. The two models will be the benchmarks in the development for the accounting education in Korea. They may be useful guides to many Korean universities in their design of accounting curricula. The future of the Korean accounting profession may be characterized by three important trends. They are: (1) globalization; (2) an expanded scope of the services of the accounting profession; and (3) a continuously expanding body of knowledge. A review of the trends of changes in accounting education suggests that a five-year accounting program will be essential for the professional accountants of the future.*

The curriculum is the core of an accounting student's educational experience. The prescribed curriculum attempts to provide students with continuity and sequence of the learning process. There has been a criticism in the United States that accounting curricula have been unchanged for the last fifty years and that gap exists between what universities teach and what accountants do.

Has the accounting curriculum really remained unchanged? Buckley observed that while very significant changes have occurred in accounting education and research, these changes have not been essentially in the professional accounting curriculum and neither the content nor pedagogy has changed noticeably in twenty years or more.¹ Fifteen years later, the same observation was made by the Bedford Committee. The committee concluded that "there is little doubt that the current content of professional accounting education, which has remained substantially the same over

the past 50 years, is generally inadequate for the future accounting professional":² Accounting practice evolves to meet the changing needs of the society. Accounting education and accounting curricula must then be changed to meet the changing needs of professional practice.³ Several Accounting Education Change Commission (AECC) schools have begun restructuring their accounting curriculum. Changes in accounting curricula are taking place in the United States. What is the status of accounting curricula in the developing nations?

This paper presents the objective of accounting education and accounting curricula in Korea. The background and the objective of accounting education in Korea are reviewed. Following this, the model accounting curriculum developed by the Korean Accounting Association (KAA) is presented and is discussed in the context of the Bedford Committee Report.

Background

While accounting in developed nations has undergone a long evolutionary process, the history of accounting in Korea is very short. Only after 1960 was accounting in Korea changed from a simple cash receipts and disbursements and analysis of transactions systems to the provision of useful information for decision-making. This change is not attributable to an isolated event. Many social, political, and economic developments and trends brought about the accounting changes.

After the first Five-Year Economic Development Plan (1962–1966) was launched, the traditionally agricultural nation was transformed into an industrial economy in less than thirty years. The country maintained an 8.6 percent average annual growth rate. The driving forces for the rapid industrialization and export growth were: (1) capital formation; (2) investment in human resources; and (3) efficient use and development of technology.

The rapid economic growth and expansion of Korea would not be possible without capital formation and efficient allocation of scarce resources. Domestic savings for long-term investment were in short supply. The economic development improved capital market mechanisms and channeled both domestic and foreign funds into productive activities. The most noticeable change in corporate financing was increased direct financing. With the economic growth, the corporate organization was largely changed from family owned to publicly owned. Corporate financing also changed from the traditional borrowings from banks or private sources to issues of securities to the public. The growth of direct corporate financing helped create the Korean Securities Exchange Commission (SEC). It requires all public corporations to publish their financial statements, which must be audited by independent certified public accountants. The nation's investment in education and training is another driving force in the success of industrialization. The government has increasingly invested in education and adopted various manpower development programs to meet the increased demand for skilled people. Science and technology education have been stressed. On-the-job training and overseas training for skilled technicians have been promoted and implemented.

Another contributing factor was the development of technology. Korean industry has diversified and strengthened its foundations through rapid technological progress. In the early 1960's, export-oriented, labor-intensive industries were developed. In the 1980s, government policy shifted to capital-intensive industries with the result that the level of technology advanced significantly.

What bearing do these factors have on accounting? Accounting plays an important role in capital formation and the efficient allocation of accumulated capital. Accounting facilitates the accumulation of smaller savings in the capital markets. Once capital is accumulated, accounting can assist in the efficient allocation of capital among competing alternatives. Public corporations in Korea must publish their financial statements. Accountants enhance the credibility of the financial statements through independent audits.

The investment in education increased the number of more college graduates, and the number of accounting students has also grown significantly to meet the increased demand for qualified accountants. In 1989, there were 118 four-year universities and colleges in Korea, and 50 universities had established accounting departments. The number of accounting students was approximately 15 000. The number of students for each major and each university is specified by the government. In 1990, the total number of incoming freshmen was 199 380; the number of incoming accounting students was only 3961 or approximately 2 percent of the total.⁴

The Objective of Accounting Education

What is the objective of accounting education in Korea? One characteristic of a profession is that it depends upon a specialized body of knowledge acquired through formal education. Professional accounting education should then be a program designed specifically to prepare students for professional careers in accounting.

This is not much different from the objective of accounting education in the United States. The KAA noted three main reasons why accounting education is important in Korea.⁵ First, rational decision-making is required for the efficient use of scarce economic resources. Rational decision-making is possible only when it is based on objective and quantitative information. Second, an industrial society needs experts who can prepare and interpret financial data objectively for the diverse interest groups. Third, management is separate from ownership. Thus, accounting information is essential to measure what has happened to the entrusted economic resources and to compare the results of operations with the established goals.

With this presumption that accounting education is important, the KAA specifies that the objective of accounting education is to prepare students for careers as professional accountants in either the private or public sector.⁶ More specifically, university accounting education prepares students for careers as: (1) accounting educators and researchers; (2) professional accountants who can supply useful information for decision-making by users of accounting information; and (3) CPAs who can enhance the credibility of financial statements for investors/creditors.

The Model Accounting Curriculum

The accounting curriculum is one of the important components of accounting education. It is perhaps the most important because the accounting curriculum is the medium through which the objective of accounting education is implemented and achieved.

No one model of accounting curriculum may be appropriate for all universities and colleges. Nevertheless, it is desirable to have minimum coverage of business and accounting topics by all the universities and colleges. Yet there has been significant differences among universities as to the content, sequence, and even the number of hours required for accounting topics. It is thus very possible that some accounting graduates may not be equipped with the qualitative standards required by the employers. To ensure a minimum coverage of accounting education and to aid in the development of accounting education, the KAA developed a model accounting curriculum. The KAA reviewed the curricula of 14 universities. On the basis of this review, the KAA set several guidelines before a questionnaire was prepared. First, accounting subjects were divided into: (1) financial accounting; (2) managerial/cost accounting; (3) taxes; (4) auditing; and (5) accounting information systems. Each area should be proportionate in terms of credit hours. Second, one area is selected as a specialized area, and each student should concentrate on his or her specialized area beginning in the third year. Third, university accounting education should be theoretically and conceptually oriented; and technical knowledge and procedures should be acquired on the job and/or through continuing education. Fourth, the range of electives from the related business subjects, such as statistics, micro-economics, financial management, and organization Behavior should be broad so that accounting students may acquire an overall view of the interrelationships of the business environment. With these guidelines the KAA sent questionnaires to the representative faculty from each university that came to the annual meeting of the KAA (December 2, 1989). A questionnaire was mailed later to those schools which did not attend the meeting. A total of 99 questionnaires were sent, and 88 usable responses were received.

The survey revealed the following majority opinions of the respondents: first, the number of required accounting credit hours should be 21 semester hours; second, all accounting majors should take: (1) cost accounting; (2) managerial accounting; (3) taxes; (4) auditing; (5) intermediate accounting; (6) accounting theory; and (7) accounting information systems; third, required business subjects should be: (1) principles of business administration; (2) business statistics; and (3) financial management; fourth, introductory accounting is counted as a core requirement. Some universities include introductory accounting as part of the accounting requirements while others count as a part of the core requirements; fifth, the relative proportion of the respective areas of accounting is as follows: financial accounting (41.3%) cost/management accounting (24.0%), taxes (12.3%), auditing (10.3%), and accounting information systems (11.8%).

The KAA then prepared two model accounting curricula – based on: (1) the survey results; (2) the suggestions of the Advisory Committee of the KAA; and (3) the

Table 1. Model accounting curriculum – I

| | First semester | Second semester |
|-------------|--|---|
| First year | | *Introductory accounting **Introduction to business administration |
| Second year | **Business statistics **Intermediate accounting **Cost accounting | **Intermediate accounting II **Management accounting **Tax accounting |
| Third year | **Financial management **Auditing **Accounting information systems **Tax planning | ***Cost accounting practice ***Advanced accounting ***Accounting systems practice ***Accounting theory |
| Fourth year | **Financial statement analysis ***Accounting for not-for-profit organizations | ***Special topics in accounting |

*Core requirements.

**Major requirements.

***Accounting electives.

opinions of individual faculty members. Table 1 presents the model curriculum and recommends that accounting students be required to take a total of 42 credit hours in accounting courses. These courses are divided into 21 credits of accounting requirements, and 21 credit hours of accounting electives.

An “ideal” curriculum for all universities was not proposed or expected. It is also desirable to consider the minority view from the survey because model is based on the majority opinions of the survey. For this reason, the KAA prepared an alternative curriculum – model II. Model II used the following three considerations. First, accounting courses for each area are listed sequentially as follows:

- (1) Financial accounting practice: introductory-intermediate-advanced
- (2) Financial accounting theory: financial accounting theory – accounting theory
- (3) Managerial/cost accounting: Managerial accounting – Cost accounting – Advanced management accounting
- (4) Tax accounting: tax accounting – tax planning
- (5) Auditing: auditing – advanced auditing
- (6) Accounting information systems: accounting information systems accounting systems practice.

Second, this accounting curriculum enables accounting students to enroll in accounting classes as early as possible. This will enable possible students to write their CPA examination (after the completion of the first two years) in the first semester of the third year. Third, the opinions of the Advisory Committee of the KAA were an important input. Table 2 presents accounting curriculum model II.

Discussion

The two model curricula are benchmarks in the development of accounting education in Korea. They also ensure the minimum coverage of the body of knowledge

Table 2. Model accounting curriculum – II

| | First semester | Second semester |
|-------------|--|--|
| First year | *Principles of business administration Principles of economics | *Introduction to accounting **Business statistics |
| Second year | *Managerial accounting **Financial accounting theory **Intermediate accounting **Financial management | **Cost accounting **Tax accounting business law **Auditing |
| Third year | **Accounting theory **Advanced management accounting Advanced auditing | Advanced accounting **Accounting information systems |
| Fourth year | Financial statement analysis Accounting systems in practice | Special topics in accounting |

*Core requirements.

**Major requirements.

***The rest are major electives.

necessary for entry into the profession. How do these curricula differ from those of American universities? They are very similar to accounting curricula of most American universities. However, one difference can be noted i.e., the number of accounting courses required. While most American universities require 30 credit hours in accounting, the model curriculum requires 42 credit hours in accounting. As presented in Table 3, the total number of credit hours required for graduation in Korea is 140. Therefore, accounting courses account for 30 percent of total requirements. The typical American university requires only 24% of a total 123 credit hours as accounting requirements.

There is no doubt that the two model accounting curricula can be useful guides to many Korean universities in the development of their accounting curricula. There may not be a universal accounting curricula that works well in all circumstances. Yet accounting curricula must serve the objective of accounting education. To be effective, then, accounting curricula must change with the environment in which the accounting profession is engaged. This requires that the accounting curricula must

Table 3. Distribution of credit hours

| Korea | Japan | USA | 1945– 1953 | 1954– 1972 | 1973– Present | 1962 | 1978 | Present | 1967 | 1974 | Present |
|---|---------------|---------------|---------------|---------------|------------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Total hours required for graduation | 180 (100%) | 160 (100%) | 140 (100%) | 147 (100%) | 137 (100%) | 124 (100%) | 132 (100%) | 120 (100%) | 123 (100%) | 120 (100%) | 123 (100%) |
| Majors | 80 (44.4%) | 82 (51.3%) | 69 (49.3%) | 83 (56.5%) | 85 (62.1%) | 76 (61.3%) | | | | | |
| Electives | 40 (22.2%) | 49 (30.6%) | 46 (32.9%) | | | | | | | | |
| General education | 60 (33.3%) | 29 (18.1%) | 25 (17.9%) | 64 (43.5%) | 52 (37.9%) | 48 (38.7%) | | | | | |

be designed to reflect the changes occurring in the business environments and the resulting changes in accounting practice.

The immediate question becomes: can the two model accounting curricula meet the challenges of the Korean accounting profession? The future of the accounting profession may be characterized by the three important trends. They are: (1) globalization; (2) an expanded scope of the services of accounting profession; and (3) a continuously expanding body of knowledge.

The first observation relates to the challenge of globalization. The two model accounting curricula do not include International Accounting in any place. The Bedford Committee Report concluded that "accountants have had to extend their knowledge and skills progressively to include a grasp of the economic and social environment in which an organization operates".⁷ Today, this economic environment consists of increased foreign competition, global markets, and expanded overseas operations.¹⁰ In addition the proliferation of multinational corporations and the internationalization of capital markets produce a growing need for a better understanding of the international dimensions of accounting. The problem with globalization centers on the generation and interpretation of globally related information. The accounting process must then include new types of transactions, events, and relationships that result from the flows of goods/services and capital across the national borders. Future accountants can be expected to face many problems. The student of accounting will encounter the complexities resulting from international operations and different accounting practice, reporting requirements, and government regulations of different countries. The author believes the accounting curriculum should include international accounting to have a better understanding of the international dimensions of accounting.

Second, how can the accounting curriculum meet an increased body of knowledge in a limited span of study time? As previously stated, the KAA approach was that university education should be conceptually and theoretically oriented and technical knowledge and procedures left to the profession. It is difficult to distinguish between theory and practice. If they can be distinguished, the question becomes: is conceptual teaching sufficient? The Bedford Committee observed that most institutions responsible for educating professionals fail to evolve as rapidly as professional practice itself.⁹

This suggests that practice should be integrated into accounting curriculum. Shank observed: "Aristotle taught carpenters and tradesmen seeing no reason why they should not be well-educated. However, if the Aristotelian carpenter cannot pound nails, he isn't likely to be in much demand in the construction trade".¹⁰ Scott also stresses that "the employers prefer to engage those who can do things in preference to those who know about the things".¹¹ When accounting graduates join either public accounting firms or other organizations, they would be assigned to technical areas and their performance will be judged by how well they complete their assignments. This means that technical knowledge is as important as conceptual knowledge. Contrary to the view held by some academicians, it follows that the university should teach both concepts and techniques. The question becomes how to approach. With the development of a complex business environment and an increased body of knowledge, it is very difficult to cover both concepts and techniques for a limited

span of four years and at the same time to provide students with a broad educational background. The Bedford Committee observed that "an increasingly popular belief is that the minimum education necessary for the professional accountant cannot be provided in four years of undergraduate study",¹² and suggested that a broad undergraduate program followed by a graduate program may be recognized as the ideal program model for a professional accounting education.¹³

Related to an increased body of knowledge is whether or not the accounting curriculum is designed to provide students with specialization. Accounting students cannot be expected to master an ever increasing body of knowledge in all areas of the expanded scope of the services of the accounting profession. Even professional examinations (CPA, CMA, CIA) in the United States test the defined body of knowledge common to each area of specialization. As the Bedford Committee observed, the scope of the services of the accounting profession has so significantly expanded that the generalists cannot effectively perform and meet the needs of society. Large CPA firms are acting not only as verifiers of information but also as systems designers and problem solvers. The large CPA firms have already classified their employees functionally, such as accounting, auditing, taxes, systems, and management consulting services. Even within the auditing area, there are industry specialist, computer, statistical sampling, and cost management specialists.

Specialized accounting education is necessary to meet the expanding needs of society. Traditional four-year programs do not need to be changed. Rather, an additional year of study could include electives for specialization. A model for specialization exists with the master's degree of taxation in the United States. Several AECC schools have also taken this approach. "The objective of specialized accounting education is to provide the student with an advanced, clearly usable level of accounting knowledge and skills. A graduate of a program of specialized accounting education should be able to function at the entry level as a qualified professional in performing a valuable service for society in a specific areas".¹⁴

A review of the trends for changes in accounting education suggests that a five-year accounting program will be essential for the professional accountants of the future. It is an additional year of study that would possibly meet (1) globalization, (2) specialized accounting education, and (3) an expanded body of knowledge.

Is accounting education in Korea ready to move to a five-year program? Are there any problems to implementing a five-year program? The KAA investigated problems of accounting education in Korea. Several questions were asked in a survey questionnaire employed by the KAA. The questions included: (1) the extent of the student's interest in accounting; (2) the role of accounting information and the importance of accounting education; (3) physical equipment necessary for new areas, such as accounting information systems; (4) availability of textbooks; and (5) the teaching loads.

As presented in Table 4, three areas were identified as serious problems for Korean accounting educators. They are: (1) A shortage of instructional equipment, such as computers for students' use, projectors, and seminar rooms; (2) the relative importance of accounting as perceived by the public; and (3) low motivation of students. It is expected that the problem of instructional equipment will be gradually solved. The fundamental problem of accounting education in Korea appears to be

Table 4. Environment of Accounting Education

| | Very serious (%) | Not serious (%) | Not serious at all (%) |
|---|------------------|-----------------|------------------------|
| 1. Minimum coverage of materials | 28.8 | 62.0 | 9.2 |
| 2. Teaching load | 69.0 | 26.9 | 4.1 |
| 3. Students' interest in accounting | 80.6 | 17.3 | 2.1 |
| 4. Recognition of accounting by society | 74.2 | 25.7 | 0.1 |
| 5. Availability of texts | 13.4 | 45.3 | 41.3 |
| 6. Influence of CPA exam | 25.5 | 60.2 | 14.2 |
| 7. Physical facilities | 76.5 | 20.4 | 3.1 |

the importance of accounting as perceived by society. There is still a majority view in Korea that accounting is no more than glorified bookkeeping. This view is reflected even in the recruiting process. Most public corporations in Korea hire college graduates on the basis of the competitive examinations. Accounting is not, however, included as one subject. Accounting majors are considered the same as business administration majors, with the result that the employment opportunities for accounting majors are less than they otherwise could be.

What can be done? There is no simple solution. More years of experience are needed for the public to realize the importance of accounting. In the meantime, accounting educators, professional accountants, and professional organizations, such as the KAA and KICPA, should attempt to educate the public.

Summary and Conclusions

This paper: (1) briefly reviewed the background of accounting education in Korea; (2) described its objective; (3) presented two model accounting curricula developed by the KAA; and (4) discussed the two model accounting curricula in the context of the Bedford Committee Report.

The history of accounting education in Korea is very short. The first accounting department in Korea was established in 1978. At present, more than 50 universities have accounting departments. The number of accounting students has also increased. The qualifications of the accounting faculty are impressive. Yonsei University, for example, has five accounting faculty members. All of them hold terminal degrees (from the University of California – Berkeley, Indiana University, New York University, Washington University and Yonsei University). The availability of textbooks is reasonable.

The two model accounting curricula will be the benchmarks in the development of accounting education in Korea. They will be useful guides to many universities in the development of their respective accounting curricula. To meet the challenges of the Korean accounting profession, however, the model accounting curriculum should be expanded into a five-year program. Currently accounting education in Korea do not seem ready for an additional year of study. More years of trials and experience may be necessary.

Notes

1. John W. Buckley. "A Perspective on Professional Accounting Education." *Journal of Accountancy* (August 1970), 42.
2. American Accounting Association. "Accounting Education: Preparing for the Expanding Professional." *Issues in Accounting Education* (Spring 1986), 172.
3. American Accounting Association, *ibid.* p. 171.
4. Korean Accounting Association. *A Study on the Development of Accounting Education Program* (Korean University Education Association in Seoul, Korea, March 1990).
5. KAA, *op cit.*, p. 15.
6. KAA, *opp cit.*, p. 14.
7. American Accounting Association, *op cit.*, p. 171.
8. E. Stout and J.A. Schweikart. "The Relevance of International Accounting to the Accounting Curriculum: A Comparison of Practitioner and Educator Opinion." *Issues in Accounting Education* (Spring 1989), 127.
9. American Accounting Association, *op cit.*, p. 171.
10. L. Jensen (ed.). *The Impact of Rule-Making on Intermediate Financial Accounting Textbooks* (Ohio State University Press: Columbus, 1982).
11. H. Skadden (ed.). *Accounting Education New Horizons for the Professional* (Reston, VA: Arthur Young 1977), 102.
12. American Accounting Association, *op cit.*, p. 180.
13. American Accounting Association, *op cit.*, p. 180.
14. American Accounting Association, *op cit.*, p. 183.

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Book Reviews

International Transfer Pricing Policies Decision Making Guidelines For Multinational Companies by Wagdy M. Abdallah. *Quorum Books, New York, 1989, 170 pp, ISBN 0-89930-294-7, \$42.95.*

With the increasing emphasis on globalization in the past decade, problems on international transfer pricing systems have begun to attract the attention of accounting researchers and practitioners. Studies have been published to examine the issues and survey the practices. By consolidating the results of these studies, this book provides a comprehensive study of international transfer pricing.

The book is written specifically for US managers and executives of multinational enterprises (MNEs) as a guide for designing international transfer pricing systems and policies. It discusses thoroughly the various objectives of international transfer pricing policies and the wide range of internal and external factors a MNE should consider when designing an international transfer pricing system. The book is organized according to a framework based on the relationships among the four components of an international pricing system: input, process, objectives, and output. Expanded discussions of each of these four components are then presented in subsequent chapters.

Chapter 1 begins by describing the international transfer pricing dilemma encountered by MNEs. It then identifies the two groups of "factors" which should be considered in determining the international transfer pricing policies. These two groups of factors (discussed in detail in Chapter 3) are: (1) the interaction or conflict of pricing with other internal objectives of the firm, such as performance evaluation, motivation, and goal congruence; and (2) environment variables that are external to the firm, e.g. foreign and domestic income taxes, tariffs, cash movement restrictions, foreign currency exchange risk, and conflict with foreign governments' policies. Finally, the chapter identifies the five criteria of an efficient international transfer pricing system as: providing an adequate profit measurement, providing adequate information for managerial decision making, increasing the overall profit rate, motivating foreign subsidiary managers to perform, and minimizing the International transaction costs.

Chapters 2, 3, and 4 discuss in detail the four major components of the international transfer pricing system. Chapter 2 discusses the "inputs" and the "process" of the system. The nine "objectives" of an international transfer pricing system are presented

in Chapter 3. The "output" of the system is presented in Chapter 4, which describes the various transfer pricing methods. The chapter also presents the results of surveys on method usage in MNEs of four countries.

The six inputs presented in Chapter 2 are: (1) relevant cost information, (2) differential income tax rates, (3) exchange risks, (4) restrictions on cash transfers, (5) import/export tariffs, and (6) competition in foreign markets. The relationship between each of these inputs and the transfer price is examined. In addition, the chapter also discusses the process of an international transfer pricing system. The process involves the consideration of the internal and external factors affecting the design of international pricing policies, the choice of various transfer pricing methods, the meeting of the requirements and the objectives of the system. The factors considered are classified as either internal or external. Internal factors are behavioral, organizational, managerial, and motivational issues. Examples of these factors are degree of decentralization, interdependence, management control system, goal congruence, motivation, and performance evaluation. The effects of each of these factors on the international pricing systems are discussed. The author also explains why MNEs should not use the profit-center concept to evaluate foreign subsidiaries' performance. As for the external factors, the three identified are market conditions in foreign countries, economic conditions, and currency appreciation or devaluation.

Chapter 3 is a very interesting chapter. It discusses in detail the nine objectives (or the factors identified in Chapter 1) of international transfer pricing systems. Again, these objectives are classified into two groups: internal and external. In discussing each objective, its impact on the determination of transfer price is also considered. For example, to achieve the objectives of reducing income tax liabilities and tariffs, the author states that "as long as the tax rate differential is higher than the net of the tariff rate imposed by the country with the higher tax rate, the higher transfer price will always generate net savings for MNEs ..." The chapter also notes the conflicts among these objectives and that MNEs must manage the trade-offs among these objectives. It concludes by stating that "MNEs are in urgent need of a practical and objective technique or model that can avoid conflicts between different objectives of the system and, at the same time, achieve the global goals of MNEs ..."

Chapter 4 is a relatively weak chapter. It merely presents the various transfer pricing methods without relating these methods to the input, process, and objectives components of the system presented earlier. The chapter ends by summarizing some surveys on the usage of various transfer pricing methods in American, Japanese, British, and Canadian MNEs and the preference ranking of these methods by US-based MNEs. Conclusions regarding the current practice are stated.

Transfer pricing policies affect several managerial decisions, and Chapter 5 discusses only the relationship between the international transfer pricing policy and the capital investment decision on foreign investments. It considers the three steps of this interface: (1) the identification of investment opportunities; (2) the analysis of the projects' cash flows; and (3) the traditional methods used to evaluate capital investments. For each step, factors such as the risks (political, financial, as well as business risks) and the different foreign tax systems/regulations are considered. The chapter ends with presenting a modified net (present value method which incorporates "the effects of four different factors: (1) foreign exchange rate fluctuation; (2)

inflation in a foreign country where the project is expected to be located; (3) transfer pricing policies, and (4) the effect of political risks".

Chapter 6 provides an overview of Section 482 of the US Internal Revenue Code. It provides three prescribed methods for determining arm's-length prices, plus a fourth method to be used in exceptional circumstances. The three prescribed methods are: (1) comparable uncontrolled price, (2) resale and (3) cost-plus. The fourth method basically allows MNEs to use an alternative method which is justified to be reasonable and appropriate. The chapter also briefly summarizes the tax systems of Canada, the United Kingdom, Germany, and Japan and how the arm's-length transfer prices are determined in these countries.

In designing the international transfer pricing policies, the MNEs must consider all the environmental factors. Chapter 7 discusses the economic, sociological, and political-legal factors in detail and its impact on the transfer pricing policies. Inflation, tariffs and duties, fluctuations in exchange rates, balance of payments disequilibriums, and restrictions of foreign trade policies are the significant economic factors discussed in the chapter. Sociological environmental factors presented are cultural and religious mores, attitudes toward growth and stability, and many other social values. Finally, the political-legal factors presented are price control, government instability, changes of political groups or governments, timing of elections, nature of elections, and confiscation of local operations.

Chapter 8 briefly summarizes the discussion and conclusions of each of the seven preceding chapters. Finally, the book has two appendices. Appendix 1 reproduces Section 482 of the Internal Revenue Code: *Allocation of Income and Deductions among Taxpayers*. Appendix 2 reproduces the *Management Accounting Guidelines on Interunit Transfer Pricing* issued by the Institute of Cost and Management Accountants (ICMA, London).

The book is very well written and the issues of international transfer pricing policies are presented logically and thoroughly. However, it does not achieve its purposes of providing comprehensive decision-making guidelines to executives of MNEs in setting international pricing policies. The major conclusions outlined in Chapter 8 basically state the complexities of the problems, the need "to make trade-offs between achieving different objectives", and the need "to use different transfer prices at different times under different conditions". It does not provide specific guidelines on how to make the trade-offs, how to manage the internal and external factors and how these factors interact with the transfer pricing methods. Specific examples of how MNEs actually manage these factors and determine their international transfer pricing policies are not provided.

A major contribution of this book is the use of a framework to examine the internal and external "factors" of an international transfer pricing system as input, process, and objective variables of the system. This provides an excellent understanding of the factors and its relationship with the transfer pricing policies. Executives of MNEs can utilize this framework to identify factors that are significant to their MNE, to determine their impacts and to set their transfer pricing policies.

Finally, the author identifies the need for more research in this subject. He calls for the development of "a practical and objective technique or model that can avoid conflicts between different objectives of the system". In addition, the book provides

a framework which can be used for conducting further empirical investigation on the relationships between the "factors" and the transfer pricing methods. Consequently, this book should motivate further research interests in the international transfer pricing arena.

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¹William A. Dymsza, Multinational Business Strategy (New York: McGraw-Hill, 1972), 49-53.

²Geoffrey Holmes, "Replacement Value Accounting." Accountancy (March 1972), 4-8.

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American Institute of Certified Public Accountants. Accounting Research Bulletin No. 43. New York: AICPA, 1953.

_____. "Financial Statements Restated for General Price Level Changes." Statement of the Accounting Principles Board No. 3. New York: AICPA, 1969.

Lorenson, Leonard and Paul Rosenfield. "Management Information and Foreign Inflation." Journal of Accountancy, December 1974, 98-102.

Revsine, Lawrence. Replacement Cost Accounting. Englewood Cliffs, N.J.: Prentice-Hall, 1973.

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Accounting Standard Selection and its Socio-economic Consequences

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Key words: Alternative accounting standards; Freedom in selection of alternative accounting techniques; Interest construction borrowings; Inventory valuation; Socio-economic consequences of accounting; Valuation of securities

Abstract: *There is a need for a set of standards to ensure true, accurate, and appropriate reporting of financial information. The selection of such standards not only affects managers, investors, and other directly interested parties, but eventually has consequences for society as a whole. To illustrate this point the author examines three episodes that occurred in Japan in 1990. In each case, the so-called freedom to employ alternative accounting techniques enabled companies to mask unreasonable profits or debilitating losses and maintain a semblance of credibility.*

Accounting standards represent those resolutions pertaining to measurement and reporting which comprise the basis upon which various financial statements are prepared. Besides indicating the financial position and activities of the business, accounting standards represent an amalgamation of accounting customs and practices recognized over the years as being useful. They indicate the accounting procedures to be followed when preparing financial statements. In a narrow sense, accounting standards refers to practices decided upon by the various agencies responsible for establishing accounting standards, including the Business Accounting Standards Board in Japan, the Financial Accounting Standards Board (FASB) in the US, the Accounting Standards Board (ASB) in the UK, and the International Accounting Standards Committee (IASC). In a broader sense, accounting standards might include various regulations pertaining to accounting passed by law. In the very broadest sense of the term, accounting standards include the rules and suggestions put forth by professional accounting organizations, etc.

At one time, funds for financing a business came from the business itself, limiting financial reporting to fulfilling the needs of the person who was both the owner and the manager. That is to say, financial reporting was a private affair. Indeed, making such a report public would only have given an advantage to competitor companies, so such an idea had no place in the thinking of the time. However, an internal source of funds proved insufficient to fulfill the needs of business seeking to expand their facilities, in response to advances in industrial technology. Consequently, businesses came to rely on external sources for funds.

In Japan, the privately owned industrial conglomerates, known as the Zaibatsu, were forcefully dismembered after the Second World War and the securities exchange was rejuvenated. The economic structure created whereby industrial capital was amassed from the savings of the general populace and this contributed greatly to Japan's subsequent economic growth. In this structure, accounting is charged with the responsibility of providing information that is necessary to the decision-making process of investors. The actual practice of accounting measurement and disclosure now plays a vital social role. There has been a shift in focus of accounting's function from indicating trustee responsibility to evaluating investment results. As for the various financial statements, the figures they reflect have increased in their accuracy and precision, and the appropriateness in indicating operating performance and financial position of a business has come to be a major concern.

When accounting information is directed toward a large, unspecified number of general investors, it becomes the target of regulation. The establishment and observance of accounting standards regarding the contents and form of financial reports take on great significance. In Japan, the Securities Exchange and Certified Public Accountants Acts passed in 1948, followed by "Accounting Standards for Business Enterprises" in 1949, intended to pave the way for financial reporting regulation. We then see regulation of financial reporting by means of Japan's long-standing Commercial Code, as well as regulation of the financial statements disclosed publically by companies issuing securities listed on the stock exchange by means of the Securities Exchange Act.

Regulations pertaining to financial reporting are basically of two types: those regulations passed by law or decided upon by an agency responsible for establishing accounting standards (government regulation); and those regulations based upon rules and suggestions made by professional accounting organizations. Regulation of financial reporting in the UK and the US started with professional accounting associations indicating accounting standards to serve as guides for their members actually in accounting practice, and then getting their members to adhere to them. However, it proved to be no easy matter to guarantee the quality of financial reporting by self-regulation on the part of such organizations. At times a company's violation of accounting standards would be overlooked by accountants and incorrect accounting information would be submitted. Every time a case of business fraud appeared, or whenever a major company went bankrupt, it cast doubt on the limits of the non-governmental regulation of financial reporting. In direct response to a public outcry against accounting practices, a gradual strengthening of governmental regulation emerged. In present-day Japan as well, there is a trend toward gradually increased governmental regulation to ensure the quality of financial reporting.

The financial report of a business is prepared by its trustees, or management, and is addressed to its consignees, or shareholders. The information disclosed in the financial statements has a strong bearing, not only on potential shareholders and creditors, but also on employees, consumers, and society as a whole. The fact that the selection of accounting standards pertaining to financial reporting has a variety of consequences for the economic life of society as a whole is yet another reason for the strengthening of the government regulation. It is true that, at the time accounting standards are established, flexibility in the choice between accounting approaches is restricted to a certain extent in order to preserve the ability to make meaningful comparisons between one financial report and another.

Accounting standards may be selected for technical reasons as well as for political reasons. As far as technical reasons are concerned, selection is basically a problem of recognizing which accounting practices are "best", and can be settled by seeking the help of accounting theory. From a political point of view, selection becomes a matter of choosing between those parties that will benefit by the selection of a certain practice, and those parties that stand to be hurt. There is quite a potential for political considerations to become woven into the setting of accounting standards. In the legal regulatory process, political pressure from people with vested interests is likely to assume the form of active lobbying. There is no doubt that financial reporting will come to play an even more important role in the relationship between society and economic conditions in which businesses are enveloped.

In the view of the above, the present paper discusses the part that accounting standard selection played in three economic episodes – (1) the rise in domestic petroleum prices, (2) the subway fare increase, (3) the rapid fall in stock prices – that occurred in Japan in the latter half of the 1990. These economic episodes force us to re-examine the concept of freedom in the selection of accounting standards.

Last-In, First-Out Method and the Recent Petroleum Price Increase

In August 1990, Iraq invaded Kuwait and the price of crude oil rose dramatically. On September 3, the evening newspapers reported that the United Arab Emirates nationally owned oil company, Abudhabi, had informed Japan's oil industry that it was substantially increasing the price on August shipments of crude. According to the report, the price per barrel (158.9 liters) would be \$10.25–\$10.55 higher than for July, with the representative crude, Maban, up \$10.55 (64.1%) to \$27.00. Abudhabi also decided to raise the price on August shipments of Arabian light, which is priced in reference to spot purchase prices for other crudes, to \$25.33 per barrel, up \$9.83 over the previous month. These marked the highest prices in 4 years 8 months (since 1985). Oman, Mexico, and other oil producers followed suit and raised their prices by approximately \$10 per barrel.

Giving this sudden rise in the price of crude as the reason, petroleum suppliers in Japan announced their intentions to raise domestic oil prices beginning in the middle of September. Now, even though the price of crude rose in August, oil companies

surely must have had the reserves of oil purchased before that time. Also there probably was a supply of oil purchased at pre-August prices still in transit to Japan. So why is it that oil companies were so quick to raise their prices? The oil industry's answer was "it is because domestic prices are computed on a basis of the last-in, first-out method used to figure the cost of crude". The Ministry of International Trade and Industry too, it seems, recognized that, due to the approximately \$10 per barrel rise in the price of crude over the July price resulting from Iraq's invasion of Kuwait, the increased cost of oil purchases for August alone nearly equalled the previous year's 1.2 billion dollar normal operating profits for all 31 domestic suppliers and refineries together. Thus, they concluded that an increase in domestic petroleum prices was unavoidable.

Strong reaction was voiced by other ministries at a cabinet meeting on September 4. In reply to the consensus that a "sudden price increase should be avoided", the Minister of International Trade and Industry promptly announced his intent to work out a solution. It included, among other things, a re-examination of the method used in computing the cost of restocking petroleum supplies or, more specifically, a change from the last-in, first-out method to an average cost method. The oil industry vehemently opposed the plan. Consequently oil suppliers were allowed to transfer the increase in the cost of oil imports, caused by the situation in the Middle East, to domestic petroleum prices. As of September 17, the wholesale prices of gasoline, kerosene and other petroleum products increased 8 yen per liter (approximately 22 cents per gallon).

With the exception of a few companies, oil suppliers had adopted the last-in, first-out method just 3 years earlier. At that time the yen was getting stronger, the cost of crude was down, and oil suppliers were under attack for not lowering their prices. Their counter to this was that they still had reserves of oil purchased at higher cost, and the average cost had not fallen that much. However, domestic prices proceeded to fall, and for companies figuring gross sales costs by the average cost method, this led to an appreciable reduction in profits. The *Japan Economic News* for April 4, 1987 reported the following:

In response to stronger yen, rising oil prices and other changes in the earning environment, we see a continued attempt by powerful companies to manipulate things by changing accounting standards. By switching over in March to a last-in, first-out method for evaluating inventory, the three big oil suppliers, Nippon Sekiyu, Idemitsu Kosan and Kyodo Sekiyu, have now placed themselves in a position where it will be easy to push through oil price hikes on the basis of fiscal accounting ... The aim of these suppliers in making such a switch is to make it easy to push through price increases on domestic prices whenever there is an increase in the price of crude. Even though the previous period was favored with a strong yen and low prices for crude, prices at the lower end of the market fell before they could be reflected in cost, and in comparison with Toa Nenryo which employs the last-in, first-out method, and recorded an all time high in earnings, Nippon Sekiyu's normal operating profits for the period ending March, 1987 fell by 20% to 126 million dollars.

Consistency in the application of accounting standards is maintained, while the last-in, first-out method demonstrates its effectiveness as a rationale for raising prices. This is one example where accounting figures influence the decisions of business and government. But viewed socio-economically, it raises the question of whether or not this sort of price hike, linked to fluctuations in the crude oil market, is beneficial. Originally, the last-in, first-out method was devised as a method for eliminating on-the-book profits (paper profits) in a context of galloping inflation.

What it does is guard against the erosion of a company's capital through taxation and other assessments against ostensible profits generated by commodity price changes that have no chance of reversing over the long term. But in the above we see it being used to support a short-term pricing strategy linked to the crude oil market. It will be interesting to see how quickly oil suppliers respond when tensions relax in the Middle East and crude prices drop again.

In any business, the possession of inventory reserves should theoretically act as a cushion to absorb changes in acquisition costs. A constantly fluctuating pricing structure is certainly not desirable. Petroleum price hikes are inevitably reflected in the steel, trucking, and other industries, and the total effect can be massive. This sort of scenario ought to have been foreseen at the time oil suppliers proposed adoption of the last-in, first-out method. It is the present author's belief that more regard should be paid to social and economic consequences whenever a switch of accounting standards is contemplated.

Interest Payments and the Recent Subway Fare Increases

On August 24, 1990 the Teito Rapid Transit Authority (RTA) of Japan applied to the Ministry of Transportation for approval of an average 13.3% increase on RTA-operated subway fares. The evening edition of the *Asahi Newspaper* reported, "the reason given was, costs for new lines, more air-conditioned cars and increased facilities have gone beyond projected estimates and operating efforts have reached their limits". The fare increase went into effect in November. Discounting fare adjustments in April, to compensate for the new consumption tax, this marked the first increase in fares in 6 years.

The figuring of cost plays an important role in the determining of rates for public services. Rates must be sufficient to maintain operations. Article 16 of the Railway Operations Law (December 4, 1986, extra edition, Law No. 92) stipulates that fare and rates must receive approval from the Minister of Transport, and the basis of such approval "will include compensation for appropriate costs incurred during the course of efficient operation, as well as appropriate profits". In order to fulfill its function as a major transportation network in an expanding urban area, it is not sufficient for a subway merely to maintain operation of its present lines. It must be continually expanding its lines, and into this is invested vast sums of borrowed capital. Interest payments alone can be substantial, and accounting for such payments presents a problem.

There are two methods in accounting for dealing with the interest payments on money borrowed for construction purposes. Based on the first method, interest is simply charged as an expense to the fiscal period in which it is incurred. The second method includes interest as part of the cost of construction and treats it as future expense when the facility is in use or operation. For ordinary businesses, construction is usually not on such a grand scale as it is for public service operations. Moreover, a clear-cut distinction cannot always be made between capital used for normal operations and capital used for construction, hence interest payments are generally treated by the first method, as current period expenses. For public service enterprises

with large amounts of capital invested in facilities under construction, such interest is often accounted for by method two, as part of construction costs to be charged as expenses at a later date. Provisions for such treatment are made in Article 10 of Accounting Standards for Railroads (February 20, 1987, extra edition, Ministry of Transport Ordinance No. 7).

Should interest payments be treated as current period expenses, or should they be counted as construction costs and charged as future expenses? There is really no clear-cut rationale for choosing one approach over the other. Interest on borrowed capital is in one sense a sort of dividend payment on invested capital, and as such ought to be included as a financial expense during the period in which it is incurred. But then, interest on capital necessary for the construction of new tracks is part of construction costs, and logically ought to be borne by fares paid by passengers using the line after it is completed.

This same sort of problem arose in connection with another RTA subway fare increase some 10 years ago. Headlines in the *Asahi Newspaper* of June 1, 1978 announced, "RTA Subways hide profits from fare increase. \$75 million manipulated on the books", with the story as follows:

RTA's 1977 financial report was announced on May 26, showing profits of \$21 million, but on the 30th it became clear that, in fact, profits of more than \$75 million had been hidden through the use of accounting techniques. Interest payments on money borrowed for construction, up until now included as construction costs, and in no way related to income computation, were suddenly entered as expenses on the income statement for 1977, and by such manipulation, \$75 million in profits were erased from view. Behind the scenes we see RTA and the Ministry of Transportation employing their cunningness to keep the excessive profits realized from last year's sharp subway fare increase from coming to the attention of the public ... Because RTA has long been operating in the red, interest payments on money borrowed for construction have always been treated separately to keep the revenue-expense deficit from growing too large. They say they switched figures around in hopes that last year's fare increase will bring about a favorable balance in revenues and expenses. But the figure switched around was \$76.1 million. As a result, interest payments on the income statement, totalling \$227 million for 1975 and \$230 million for 1976, suddenly jumped to \$311 million for 1977, with profits disappearing by that amount. Computed according to the accounting method used up until now, what should have been a profit of \$97 million was consequently whittled down to \$21 million, which appears as very meager profits for a year in which substantial fare increases were made.

Entering interest payments on money borrowed for construction purposes as current period expenses rather than as construction costs is clearly a switch in accounting techniques, and not something made from the clear blue sky. Article 4 of Accounting Provisions for Regional Railway stipulates that, "In keeping company accounts, the same methods shall be applied consistently from period to period, without aberrant changes." The Ministry of Transportation's comment in regard to this was, "RTA Subways employed the same accounting method from 1954 to 1977, and from 1977 on they plan to use the new method, so there should be no problem".

The newspaper also quoted a remark by RTA Subway's vice-president.

It was in no way true that the increase in our fares in step with the financial floundering Metropolitan Subways has led to excessive fares and unexpected profits. Such criticism is way off target. By employing this new accounting technique we now have a sound accounting system. Rather, it can be said that the way our accounting was done up until this time was unsound.

His rationale was that charging interest payments as current period expenses makes for "sound accounting", and this he rhetorically waved as a banner. There can be no doubt that charging interest payments on capital invested in track under construction as current expenses increases the burden on operations by that amount.

But as to whether or not operating difficulties due to such an increased burden can validly be used as an excuse for increasing present fares, seems to be a problem that goes beyond accounting theory alone. It would appear there is a need for a more general sort of discussion.

This question as to whether or not interest payments should be entered as costs relating to construction of fixed assets has long been an important point of contention in the field of accounting. In 1912 the Japanese scholar, Y. Satoh, discussed the pros and cons of this problem in his paper entitled "Methods of Accounting Interest Payments on Loans". Tetsuzo Ohta (1968) makes the following observation: "When it comes to putting accounting into actual practice and you examine the various techniques, you discover there are items remaining for which it is not all that easy to come up with a solution." Among these, the problem of interest is "like the bitter tea from used tea leaves", and there is a need to "remove the dust-covered folder from the filing cabinet" and carefully re-examine this question. He further notes that the argument for treating construction-related interest as a current period expense can only be grounded in conservatism. And this is supposed to give us "sound accounting"? This whole question is in need of reconsideration.

Cost? Or Whichever Less? The Recent Decline in Stock Prices

The price of stocks, bonds, and other securities fell sharply in September, 1990. September 29 was a Saturday, the 30th a Sunday, so the 28th was the closing day for trading. Under the headline "Stock Prices Close Below \$156", the *Asahi Newspaper* for September 29 reported the following:

With prices continuing their rapid fall, the Tokyo stock market showed a nearly across the board decline, with individual investors rushing to sell off shares because of growing concern for the future brought about by uncertainty over the situation in the Middle East and the increase in the price of oil. For the first time since March 1987, the average price on one portion of shares on the Tokyo Securities Exchange fell below \$156.00, to close at \$155.43, down \$5.84 from the previous day, and reaching a new record low for this year for the fourth day straight. This marks a 46% decline over the last year's high on December 29th, and surpasses the 44% rate of decline seen during the 1965 securities recession, to become the sharpest decline since the brief period of confusion following the reopening of the Tokyo Securities Exchange after the war in 1949. The volume of trading was 500.6 million shares.

The question here is: how does a business enter the value of such stocks, bonds, and other securities it possesses on the balance sheet it prepares to indicate its financial position for September? In principle, the Commercial Code adopts a representation on a cost basis, and does not recognize a current or market price representation. However, in situations where the market price falls below acquisition cost, it permits valuation at cost or market price, whichever is less. It is left to the individual business to choose which accounting method it will employ: cost valuation or whichever lesser valuation. In this way, then, businesses choosing the cost valuation method simply ignore slight declines in share value. When the decline is very sharp, if there is good reason to expect that prices will recover, then values are still listed at acquisition cost. Businesses choosing the whichever-less method evaluate fallen shares at current market price.

On September 26, 1990, Nippon Telephone and Telegraph (NTT) shares fell to \$5630.00, the lowest since their listing on the Exchange. They recovered slightly on the 27th and closed on the 28th at \$5733.33, a 33% decline over the end of March. The *Japan Economic News* for September 28 reported:

On the 27th NTT shares reached a temporary record low since their listing on the Exchange. Coming just before the finish of the interim fiscal period ending September, this decline is likely to cause appreciable valuation losses to appear on the interim reports for companies holding NTT stock. Of the four telephone switchboard companies having close affiliation with NTT, Nippon Denki, Hitachi Seisaku Sho and Fujitsu all employ the whichever less method, and using the 27th closing price, it is expected that together they will figure a valuation loss totalling approximately \$59.26 million. Adding to this the valuation losses for 1988 and '89 fiscal years, brings the September end total to over \$200 million ...

Given the same business operations conducted within the same economic environment, then different current period profits are reported in the financial statements depending on which of the alternate accounting methods is chosen. Businesses employing the whichever-less method record valuation losses whenever the current market price of shares falls below their acquisition cost, resulting in a reduction of current period profits by that amount. Businesses employing the cost basis method do not record valuation losses as long as the decline in market price is not extreme, or even if it is extreme, as long as there is thought to be a good chance of recovery. With the cost basis method, however, the business still must bear such losses, even though they do not appear as a loss in profits in computations.

The problem of falling share prices has grave consequences, particularly for the financial community. For the two fiscal years of 1988 and 1989 banks are said to have amassed as much as \$65.2 billion in total capital on the domestic and foreign capital markets. They made use of high share prices to gather low interest capital and increased their own proprietary capital, while at the same time off-the-book profits on valuable securities in their possession increased at a yearly rate of 20-30%, and it was expected they would meet the Bank for International Settlements (BIS) regulation concerning the ratio of proprietary capital to total assets. From this we can imagine just how great an effect the plunge in share prices from the beginning of 1990 through September has had. The *Asahi Newspaper* for November 22 summarized the September end interim reports for 12 metropolitan banks as follows:

Twelve metropolitan banks yesterday announced their interim reports for the period ending in September. Due to sharp decrease in profit margin caused by rising interest and the increasing cost of capital accumulation, and also due to large valuation losses brought on by the recent decline in the market price of stocks and bonds, normal operating profits for these twelve banks are down a whopping 39.4% average over the same period last year. Such a decline in market price is especially damaging to off the book profits on stocks. Nearly 60%, or \$163 billion in off the book profits for the same period last year were blown away ... Because of this, the ratio of proprietary capital to total assets has deteriorated, and for nine of these banks, has fallen below the 8% level they are required by BIS regulation to achieve by March of 1993.

For the sake of upgrading operations and strengthening the business structure, the finance community has in principle adopted the whichever less method for evaluating securities. At present, however, many businesses and institutions in fact employ the cost basis method, and for this reason off-the-book losses on bank-held securities resulting from the recent decline in market prices apparently comes to a

considerable sum. The *Japan Economic News* for November 28 analyzes the interim reports for these banks and reports as follows:

As a result of falling market prices on securities, off the book losses sustained by banks holding such securities suddenly ballooned on their interim financial reports for September. Total off the book losses for metropolitan banks is thought to reach the neighborhood of \$7 billion 390 million, up as much as 38% over March of this year. Off the book losses do not appear in financial computations as such, but if they had been treated as actual losses, then total net deficits for metropolitan banks would have come to more than \$1 billion 480 million, which means that they have been hurt much worse than interim report figures suggest ... Sumitomo, Tokai and Daiwa employ the whichever less evaluation method. The nine remaining banks employ the cost basis method, and all sustained off the book losses at the interim accounting. From the interim reports of the banks it is surmised that Daiichi Kangyo's off the book losses on securities were greater than \$2 billion, while those of Mitsui and Kyowa were greater than \$740 million ... Supposing that these nine banks had employed the whichever less method, then off the book losses would have been actual valuation losses, forcing the necessity for redemption. A whichever less based computation of net business profits made by simply deducting off the book losses from the net business profits reported for each bank would put six of these banks in the red, with Daiichi Kangyo showing a deficit of \$1 billion 829 million.

The above illustrates how the adoption of either the cost basis method or whichever-less method can change the profit figure computed in the financial reports in times when the market price of stocks and securities decreases. But is it really desirable that the selection of different accounting techniques should lead to different profit figures being reported? This is a question that needs further consideration. In particular, adoption of the whichever-less method means that only off-the-book profits are possible when stock and security prices rise, while the cost methods means that not only will there be off-the-book profits when stock and security prices are high, but off-the-book losses when prices are low. The mandatory use of the whichever-less method will ensure that a deterioration of operating results, such as those resulting from the recent decline in stock and security prices, will be reported. By applying the cost method, however, one can avoid having such situations reported. Such so-called freedom in the selection of accounting standards leaves us with a major problem in the area of financial information disclosure.

Conclusion

Occasionally there exists alternate approaches among the accounting methods which form the basis for the preparation of the various financial statements. In the three recent events described in this paper, we found problems arising from the choice between such alternate accounting methods.

In general, the selection of accounting standards occurs at two levels. At the first level, a business is required by law to follow a specific method in preparing its reports, or conversely, is forbidden from employing a method that is deemed undesirable, or else selection is made by some agency vested with such authority. The accounting provisions contained in the Commercial Code and Accounting Standards for Business Enterprises are typical examples of selection at this level. Decrees or memoranda issued by the supervisory office also belong to this level. Because of the need for economic unification in Japan before and during the Second World War, virtually all accounting standard selection was made at this

level. Selection at the second level includes those choices made by individual companies within the accounting standard framework prescribed by legislation or by standard setting agencies, as well as choices between alternate methods in areas where no standards have been established. At the time it prepares its financial statements, a company must note as an explanation of accounting policy which of the alternate accounting methods it has selected to adopt.

No matter which accounting standard is selected, if it is applied consistently it will give equivalent results over a long period of time. It is also true, however, that for any given fiscal period, the selection of one accounting method in place of another will sometimes lead to profit figures that are smaller or larger than if a different method had been chosen. Companies whose profits are small, or who record deficits and are not able to make dividend payments to shareholders, will not only have a difficult time accumulating funds by the issuing of stock, but will also find it difficult to obtain loans from banks, etc. To prevent such a situation, it sometimes happens that a company will switch accounting standards to give the appearance of more consistent earnings. Switching accounting standards in this manner is certainly different from listing phoney transactions or omitting real ones, listing fictitious assets or debts or failing to list real ones, and the various other types of fraudulent accounting.

Accounting standards have been established so that the financial statement of a business indicates its operating performance and financial position in a manner that is both true and fair. In the past it has been thought that any effects such accounting standard selection might have are neutral. Recently, however, this assumption has come to be questioned. Until now, it is probably true to say that accounting standards have been selected in view of the requirements of businesses alone. But the examples discussed in this paper were all cases of accounting standard selection having a variety of consequences on society and the economy. Cabinet ministers opposing the raising of domestic oil prices tied directly to fluctuations in the price of crude were countered with the argument for "consistent application of accounting standards". In the debate over the RTA Subway fare increase, user criticism was countered with "sound accounting" as a shield. In the third example, the freedom to select accounting standards was used as a device to soften the impact of valuation losses caused by a fall in the price of stocks and securities. Financial statements have a tremendous effect on decisions and actions of the business itself, government, unions, and investors. It would appear the time has come for us to take a new look at the relationship between such freedom to select accounting standards and the consequences such selection might have for society.

There was a time when freedom to select alternate accounting standards was not advocated because of difficulties in attempting to compare and contrast different businesses. This thinking was in vogue when the present author first began his study of accounting. I remember the confusion at the 7th Japan Accounting Association Convention in 1948 – the first such conference to be held since the end of the war. This convention was a gathering of scholars in the accounting field just on the eve of the publication of "Accounting Standards for Business Enterprises". Especially instructive was the round-table discussion presided over by Iwao Iwata (1949), centering on the theme "Improvement and unification of the financial statements".

Freedom in the selection of accounting standards was a new idea then. We were taught the virtues of avoiding government interference in the affairs of a business and of having each individual business choose which alternate accounting standards best fit its situation or needs. The idea of comparing different businesses from the point of view of society was rejected. We learned that importance of the consistent application of accounting standards so that the operating performance and financial position of a business can be observed and compared period by period. Freedom in the selection of accounting standards was a concept central to financial reporting in a free economic society and was one of the major pillars supporting the prosperity of modern society.

More than 40 years have passed since that time, and now the present author finds himself beginning to have doubts regarding the freedom in selection of accounting standards. When pondering the socio-economic consequences of business financial reporting of the type demonstrated in the examples presented in this paper, one cannot help but feel that a certain amount of limitation ought to be placed on the flexibility in the selection of alternate accounting standards.

More than 10 years ago Stephen A. Zeff (1978) made the following observation:

Since the 1960s, the American accounting profession has been aware of the increasing influence of "outside forces" in the standard-setting process. Two parallel developments have marked this trend. First, individuals and groups that had rarely shown any interest in the setting of accounting standards began to intervene actively and powerfully in the process. Second, these parties began to invoke arguments other than those which have traditionally been employed in accounting discussions. The term "economic consequences" has been used to describe these novel kinds of arguments.

Accounting reports influence decisions, and actions resulting from such decisions might in turn affect other related persons in a manner that is detrimental. In today's society we have reached a point where accounting standards cannot be established without considering their social and economic consequences.

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The True and Fair View Concept – A Formula for International Disharmony: Some Empirical Evidence

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Abstract: *The true and fair view concept has been at the heart of financial reporting in the UK for over 40 years. In recent years there has been a major increase in the international importance of this concept. This has accompanied its adoption by the European Community in the Fourth Directive on company law and its implementation in all Community countries. However, this concept has never been defined in UK legislation, and a variety of meanings can be attributed to it. In view of the recent international developments and given that the UK is the source of this concept, this study sought to elicit the views of senior UK practitioners on the true and fair concept. Quite surprisingly, over 50 percent of the people interviewed had reservations, some very major ones, about this concept. Even those who were supportive could hardly have been described as providing a staunch defence of this concept. Therefore, because of its ambiguity and cultural dependence, this paper concludes that the true and fair concept is an inappropriate basis for international accounting harmonization.*

The objective of this paper is to consider the nature of the true and fair view concept and to report the findings of a study designed to elicit the views of senior UK practitioners on this concept. The financial statements in the UK have, for over 40 years, been required to show "a true and fair view". Similarly, auditors have been required to report explicitly on whether the financial statements do give "a true and fair view". In recent years, in an attempt to harmonize international accounting practice, this concept has been adopted by the European Community in its Fourth Directive. In view of the increasing international importance of this concept, this study sought to examine opinions on it from practitioners in the country from which it originated.

An Exploration of the True and Fair Concept

Despite the existence of the phrase “a true and fair view” since 1947, no explanation of its meaning has been offered in either the UK company law or in the European Community’s Fourth Directive. In 1982, Flint¹ argued that:

For more than thirty years the directors of companies have approved and auditors have reported on accounts which have been claimed to have given a “true and fair view” as required by the law. It is reasonable to assume, therefore, that there must be some general understanding of what is required, although it is not explicitly recorded. (p. 8)

A review of the literature reveals very few definitions of the phrase “a true and fair view”, suggesting that few authors are willing to commit themselves to a definition of the “general understanding” that Flint believed to exist. The most widely cited definition is that offered by Lee:²

Today, “true and fair view” has become a term of art. It is generally understood to mean a presentation of accounts, drawn up according to accepted accounting principles, using accurate figures as far as possible, and reasonable estimates otherwise; and arranging them so as to show, within the limits of current accounting practice, as objective a picture as possible, free from wilful bias, distortion, manipulation, or concealment of material facts. In other words the spirit as well as the letter of the law must be observed. (p. 270)

An examination of the *Shorter Oxford Dictionary* current at the time of the introduction of the phrase “true and fair” offers an extensive range of definitions for both “true” and “fair”. Relevant definitions of “true” include “reliable”, “free from deceit”, “consistent with fact”, “agreeing with reality”, “representing the thing as it is”, “agreeing with a standard, pattern, or rule” and “exact, accurate, precise”. Definitions of “fair” vary more widely; “attractive at first sight or hearing; specious, flattering” as in a cited reference “a fayre speaker, and a deep dissembler” which appears to be a neat justification for creative accounting(!), but is unlikely to have been the intention of the legislation. However, three distinct meanings do appear, each of which may put a different emphasis on the “true and fair” concept:

- (1) “clear, distinct, plainly to be seen”;
- (2) “free from bias, fraud or injustice”; and
- (3) “tolerable; passable; average”.

There are a number of different elements that emerge both from Lee’s definition and from a literal interpretation of the words “true” and “fair”. First, Lee refers to the acceptability of “reasonable” estimates and acceptance of the “limits of current accounting practice”, suggesting that “true and fair” implies the acceptance that there is a limit to what accountants can achieve in line with the “tolerable” or “passable” meaning of “fair”. The introduction of the phrase “a true and fair view” was recommended by a UK government committee on company law, the Cohen Committee, to replace a requirement that the balance sheet should exhibit “a true and correct view” of a company’s affairs. This change was advocated by the UK’s largest professional accountancy body, the Institute of Chartered Accountants in England and Wales (ICAEW). The reason for the ICAEW’s preference for the word “fair” instead of “correct” was explained in the journal *The Accountant* on July 1, 1944:

The word “correct” has always been too strong because it implies that there is one view which is “correct” as against all the others which are incorrect. In published accounts there is no standard of absolute truth and the Institute’s suggested amendment would recognise that the presentation of the figures can only be that which is, in the personal view of the auditor, a fair view. (p. 2)

This view of “fair” as a more attainable standard than “correct” is similarly articulated by McMonnies³ who considered that “‘fair’ is possible in a way that the ‘correct’ of the 1929 audit report never was”. On the other hand, to Lord Benson,⁴ “true and fair” seemed a more demanding requirement than “true and correct”, he observed (p. 45):

Before the 1948 Act came into force it was not unusual for accountants to say “well it is on the right side”. In short, provided that the accounts as presented to shareholders and the public showed a worse position than was in fact the case they could be accepted ... The 1948 Act changed the whole situation. It required that the accounts should be “true and fair”. This meant that the doctrine of “correctness” or “is it on the right side” went out of the window. In effect substance took precedence over form.

As Bircher⁵ reports, Lord Benson was one of those considered for the chairmanship of the committee which drafted the Companies Act 1947 (which formed the basis for the 1948 Act).

Second, Lee refers to freedom from “concealment of material facts” and observing “the spirit as well as the letter of the law”. Some authorities see the word “true” as implying literal description, while “fair” implies that care should be taken to ensure that the literal description is not misleading. In other words a statement may be “true” but not “fair”. Cowan⁶ illustrates this point with a story. The captain of a tramp steamer was annoyed by the mate’s drinking habits. One day he was irritated to the point of writing in the ship’s log the words, “The mate was drunk today”. On the following day the mate, now sober and on watch, entered in the log the words, “The captain was sober today”. The mate’s observation was true, but not fair. “Fair” in this context represents our dictionary definition of “clear, distinct, plainly to be seen”. However, the dictionary definition of “true” includes as we have seen, “free from deceit” and “consistent with fact”. Thus the natural meanings of the words “true” and “fair” do not necessarily imply any conflict.

The concept that the financial statements should conform to the spirit as well as the letter of the law can be found in English law before the true and fair view requirement. In *R. v. Kylsant* in 1932 the Attorney General argued in a successful prosecution:

Technical rules of accountancy are admirable things but they are the letter and not the spirit. It is no good observing merely the letter; the fundamental object of the profession is to ensure that in the documents which are produced a true and accurate account of the affairs of the company is given. If the documents convey to a reasonably intelligent person a false impression, all the technical rules of accountancy may be observed and at the same time the accountants’ profession has failed to carry out its primary and obvious duty, (cited by Baxt,⁷ p. 304)

Third, Lee refers to “as objective a picture as possible, free from wilful bias”. Similarly, the dictionary definition of “fair” includes “free from bias, fraud, or injustice”. The concept of “freedom from bias” or “neutrality” as a basic accounting concept has featured in a series of attempts to identify a conceptual framework for financial reporting. For example, it is referred to explicitly by the American Accounting Association,⁸ the Trueblood Report,⁹ Stamp,¹⁰ Solomons,¹¹ and the International Accounting Standards Committee.¹² It is implied in the American Accounting

Association's first discussion of accounting conventions¹³ and in Paton and Littleton's 1940¹⁴ work. The concept has two aspects: first, that in presenting the accounts there should be no attempt to manipulate users towards a particular conclusion; and second, that all segments of the user community should be equally well served. Cowan⁶ saw this "freedom from bias" view of fairness as "widely held in the United States". By contrast he considered that for British accountants the "main emphasis is on openness and clarity", that is the second aspect of "true and fair" considered above.

If "freedom from bias" involves serving all the users of the financial statements then a question arises as to who those users are. Flint¹ argued (p. 16) that "in the preparation of the accounts the rights and the needs of the shareholders certainly rank first in importance, but ... other interest groups must also be considered". In Australia a review of the "true and fair view" requirement by a stock exchange committee argued that a formal definition of "true and fair" should specify the purpose and users of account to be covered. The suggested formula was to relate true and fair to "those who might reasonably be expected to refer to those accounts", embracing "holders or prospective purchasers of shares, debentures, notes or other interests"¹⁵ (pp. 28–29).

Fourth, Lee refers to "accounts drawn up according to accepted accounting principles". Similarly the ICAEW¹⁶ has stated that "A true and fair view also implies the constant application of generally accepted principles". More recently, the ICAEW¹⁷ took the view that for the financial statements to express "a true and fair view", the auditor must be satisfied that:

- (a) all relevant Statements of Standard Accounting Practice have been complied with, except in situations in which for justifiable reasons they are not strictly applicable because they are impractical or, exceptionally, having regard to the circumstances, would be inappropriate or give a misleading view.
- (b) any significant accounting policies which are not the subject of Statements of Standard Accounting Practice are appropriate to the circumstances of the business.

Irish¹⁸ argued that the words "true and fair" implied that "the accounts follow the rules appropriate to this case". The UK courts have also considered how to interpret the "true and fair" concept. In the case of the *Re Press Caps Ltd.* (1949, ch. 434) a shareholder challenged the validity of a balance sheet where freehold property valued at £90 000 had been shown at cost less depreciation of £30 000. The Court of Appeal rejected the challenge. In doing so Lord Justice Somervell observed that the accounting treatment was "in accordance with what is very common practice". The judgment is frequently cited as an indication that a true and fair view can be achieved by following normal accounting principles. However, Williams¹⁹ notes that the other two judges in the Court of Appeal decided the case on other grounds.

A number of authorities have argued that Statements of Standard Accounting Practice (SSAPs) are a strong indicator of best professional practice and therefore, compliance is likely to ensure "a true and fair view". Sherrard²⁰ considered that:

The persuasive power of the standards will, I am sure, be seen to be greatly enhanced by the process by which they have been produced. They do, after all, represent the consensus opinions and recommendations of the combined accountancy profession. (p. 132)

Counsel's opinion obtained by the Accounting Standards Committee supports this view that "the immediate effect of an SSAP is to strengthen the likelihood that a

court will hold that compliance with the prescribed standard is necessary for the accounts to give a true and fair view".²¹ One company law textbook²² offered the observation that (p. 218): "If a court ever had to decide whether a set of accounts gave a true and fair view it is difficult to see what other criteria could be applied than whether the accounts are drawn up in accordance with the considered practice of accountants generally". Renshall and Walmsley (23) considered true and fair in the context of the "override" provisions, and argued that:

In practice the major instances in which the true and fair override principle is applied are instances in which the statutory provisions do not accord with a relevant SSAP or with industry practice. In general such instances are likely to be acceptable to the courts ... (p. 313)

Therefore, Renshall and Walmsley, while accepting that the use of the true and fair override may be possible without the authority of an SSAP, argue that such instances will be rare because of the lack of an authority to provide justification. Similarly Rutherford²⁴ saw compliance with Generally Accepted Accounting Principles (GAAP) as the only credible interpretation of the true and fair view (TFV): "The TFV doctrine as currently employed by the profession lacks a settled and widely accepted explication and is unlikely to achieve one in the near future, except by the adoption of compliance with GAAP as a technical definition".

It should be noted that the legal interpretations are based on a perception of SSAPs as an expression of the accounting profession's best technical judgment. In the USA the weight of evidence that accounting rules emerge, in response to lobbying, on a "political" rather than "technical" basis has led to some questioning of the constitutional validity of accounting standards as privately produced quasi-legislation (see Johnson;²⁵ Committee²⁶). It might be interesting to see the response of the UK courts to evidence that some of the SSAPs, at least, have emerged from a similarly "politicized" process (e.g., see, Hope and Briggs;²⁷ Hope and Gray;²⁸ Westwick²⁹).

Thus we can identify four separate, distinct and not totally complementary meanings for the phrase "a true and fair view":

- (1) as a relaxation of previous accounting rules, acknowledging that various areas of judgment and estimation arise in the preparation of financial statements;
- (2) as a strengthening of previous accounting rules, effectively moving towards a "substance over form" approach;
- (3) as an assertion that the financial statements should be free from bias; and
- (4) as a basis for the assertion of the authority of the technical pronouncements emerging from the accounting profession.

Given these apparent contradictions, it is not surprising that in Australia, a Registrar of Companies who was responsible for the administration of the Companies Act commented:³⁰ "I would not for one moment contemplate a prosecution based on so slippery a concept as truth and fairness" (p. 107).

Williams¹⁹ states that in the UK there has only been one trivial prosecution for failure to provide a true and fair view. Thus, in two of the major countries with long experience of the true and fair view requirement it has proved in practice to be too vague to form the basis for legal action. Following an extensive study, Chastney³¹ concluded that: "True and fair is what you make it" (p. 92). However, it is from

these foundations that the true and fair view concept has been exported to all the member countries of the European Community.

The European Dimension

The European Community's Fourth Directive on company law, issued on July 25, 1978, has been described as the "Kingpin of accounting harmonization within the community"³² (p. 5). Article 2 of this Directive includes the following paragraphs:

3. The annual accounts shall give a true and fair view of the company's assets, liabilities, financial position and profit or loss.
4. Where the application of the provisions of this Directive would not be sufficient to give a true and fair view within the meaning of paragraph 3, additional information must be given.
5. Where in exceptional cases the application of a provision of this Directive is incompatible with the obligation laid down in paragraph 3 that provision must be departed from in order to give a true and fair view within the meaning of paragraph 3. Any such departure must be disclosed in the notes on the accounts together with an explanation of the reasons for it and a statement of its effects on the assets, liabilities, financial position and profit or loss. The Member States may define the exceptional rules in question and lay down the relevant special rules.

By contrast, the first draft of the Directive, published in 1971, contained no reference to the true and fair view concept. The second draft in 1974 referred to it only in one paragraph similar to paragraph 3 of Article 2 of the published Directive; it did not include the requirements for extra information and a possible override of specific rules as laid down in paragraphs 4 and 5 of the published Directive.

All the member states of the European Community have complied with the requirement that annual accounts should present a true and fair view. However, Germany does not require, or even permit, departure from the detailed requirements of the law to give a true and fair view. Italian law permits but does not require departure from legal requirements to give a true and fair view.³³ A survey³⁴ of 475 European companies' financial statements found that 10 used the true and fair override. The same survey indicated that: "The concept of a true and fair view has a different meaning in various countries" (p. 27). There are a number of reasons why the interpretation of the concept can vary. First, some authorities may make it clear that in practice the law will be applied to "a true and fair view" in a particular way. For example, the official explanatory note to the draft German law applying the true and fair concept observed: "In spite of the pretentious formulation it is supposed that for practice there will be no principle changes"³⁵ (p. 123). Second, in translation, the phrase "a true and fair view" may take on a different tone. Rutherford³⁶ explores a number of translations by European Community countries and found a number of differences. In particular, most countries translate "true and fair" with a single adjective, so that the inherent ambiguity of the two words disappears (e.g., *fedele* in Italian and *getrouw* in Dutch). Third, the concept is likely to be defined by development from, or contrast with, a previous term used to describe the nature of the financial statements. As we have seen above, the intended significance of the promoters of "true and fair" in the UK can be better understood by a comparison with the previous phrase "true and correct". Similarly, Pham³⁷ developed an understanding of the new legal requirement of "*image fidèle*" (i.e., the French translation of "true and fair

view") in the light of the traditional requirement for "*regularité et sincérité*". Fourth, in so far as the concept of true and fair depends upon the normal practice of accountants, the character and authority of the accounting profession vary between countries, with consequent variations in the content and reliability of professional pronouncements. As Bird³⁸ observed:

You might not be able to satisfy a British court that your accounts are true and fair even if you can show that they satisfy the reasonable expectations of, say, Italian accounts! So there is no assurance that an EEC directive will produce harmonisation even if its meaning is genuinely agreed.

Problems relating to the adoption throughout the European Community of the true and fair concept are compounded by the existence of varying national accounting practices. Simmonds and Azières³⁹ asked Touche Ross offices in seven European Community countries to compute a profit figure based on a set of accounting data. They found that depending on the country, "a true and fair view" could be given by profit figures ranging from 27 to 194 million ecu. With this sort of evidence, it is difficult to dispute the proposition of a spokesman for the European central banks who stated that: "Our prime concern is to ensure that the financial position of European companies can be compared which, in our view, entails, in our terms, a higher level of requirement than that necessitated by the conventional concept of a true and fair view".⁴⁰

The true and fair view concept first appeared in the second draft of the Fourth Directive following the accession of the UK to the European Community. The attitudes underlying the UK approach have been summarized by Tweedie⁴¹ as follows:

With the entry of the UK and Ireland into the EEC, the draft directive underwent a major change with the introduction of both the concept of the true and fair view and greater flexibility in presentation. Without these major amendments, financial reporting in the UK would have undergone fundamental changes in both philosophy and style. Nevertheless the Fourth Directive has left accounting in the UK with a legacy of Continental practice which threatens to put the brake on constructive development in financial reporting, and which could result in UK reporting methods diverging markedly from practice in the rest of the English-speaking world. (p. 112)

Thus the true and fair view concept could be viewed as a device to protect the traditional framework of UK accounting.

The Research Approach

In view of the spread of "a true and fair view" throughout the European Community, the intention of this study was to ascertain the views of senior UK practitioners regarding this phrase. The approach adopted in this study was essentially qualitative in nature (for discussion of qualitative and quantitative research, see Patton⁴²). The main components necessary for the collection of qualitative data were described by Lofland⁴³ as being that the researcher must be able to get close to the people or situation at the center of the study, an accurate record must be made of what is said or happens, the data should be a pure description of people, activities or interactions and they should consist of direct quotations. Therefore, qualitative research generally seeks to understand an event or action by using people's own words. The data for this study of the true and fair concept were obtained as part of a larger study which examined the message the auditor was trying to communicate in an unqualified

audit report. Allport⁴⁴ considered that the best way to determine another person's views was to ask them. This study sought to interview the technical audit partners of the "top 30" accountancy firms in the UK (for a discussion of personal interviews see, for example, Hyman;⁴⁵ Richardson et al.;⁴⁶ Brenner et al.⁴⁷). Twenty-two of the target population of firms agreed to participate. Altogether 25 interviews were conducted. The additional interviews included discussions with members of the ICAEW's Council and the Auditing Practices Committee. Twenty-three of the interviewees were partners and were usually based in their firms' London technical departments. The interviews were tape recorded and were conducted between December 1990 and May 1991.

The Views of UK Practitioners

In view of the lack of a definitive definition, the interviewees were asked "How well does the phrase 'true and fair' reflect what the auditor is trying to say about the financial statements?" Given that it was the UK which pressed for this phrase to be included in the Fourth Directive, it was supposed at the outset of this study that there would have been strong support for it. However, this was not the case. What support there was for it was hardly staunch, while a number of the interviewees did express major reservations about it, and in particular about the word "true". Over 50 percent of this sample of senior practitioners had reservations of one sort or another about the phrase "true and fair".

The interviewee most supportive of the true and fair view concept offered a combined definition and justification: "truth to me encompasses a notion of correctness, ... and fairness ... is a very much broader concept that says in portraying this reality we have told the reader all that he is entitled to know in the circumstances of this particular business"; whereas another firm supporter of the concept appeared positively to relish the ambiguity: "I think it is a pretty good phrase because it could mean all things to all men". Two supporters of the concept were aware that the phrase was only meaningful to those with a good technical grasp: "In our opinion it is a valid concept to use ... [but] ... the subtlety is lost on a lot of readers", and "I think it conveys quite a good message to a very informed reader". Another person raised the specific issue of whether the users appreciated the subtlety between "a true and fair view" and "the true and fair view". Though only a slight difference in wording, there is a massive difference in the meaning. One person, while broadly supportive of the concept was concerned that the word "fair" was very subjective. Similarly, four interviewees expressed broad support for the phrase but disliked the word "true". One stated that: "The idea of truth may be overstating the case a bit". Another was of the opinion that: "I'm not sure that true is the best word to use", and one of the others stated: "I think 'true' is an unhelpful word". The fourth person asked "What else would you have if you didn't have true and fair?" though he did consider that "truth is the problem".

Four interviewees appeared to accept the phrase but with a large measure of indifference. Their comments included: "Nobody has come up with a better set of words", "I don't think there is anything to be gained from slinging it out of the

window and starting again", and "I don't think the actual terminology matters". These sort of views were reflected in the comments of two interviewees who were mildly opposed to the concept: "The words are ingrained and at the end of the day they're just words", and "It's jargon ... the trouble is there isn't a better substitute".

One interviewee who was opposed to the concept was averse to the word "true"; this was because "the two words are in conflict with each other ... truth has an exactitude about it". Three interviewees disliked the ambiguity of the phrase. One person stated: "I have never quite satisfactorily worked out in my own mind what 'true and fair' means". Another stated: "I think it's a cop out ... if you can't define it you probably don't know what it means". The third person thought it was "a sort of muddled statement". One person who disliked the phrase seemed resigned to its continuance: "I don't think it is likely to change in the near future". Four interviewees expressed a general distaste for the phrase. Their comments included: "I don't think it helps terribly much", "I don't think it reflects the results of the auditors' work", "It's a clumsy phrase", and "it is an apparent contradiction in terms".

Table 1. Summary of auditors' opinions on "true and fair"

| Broad categories | No. of auditors | Spectrum of views | No. of auditors |
|---------------------|-----------------|--|-----------------|
| Supportive | 10 | Strongly supportive | 2 |
| | | Supportive but aware that the phrase might confuse non-accountants | 3 |
| Largely indifferent | 4 | Broadly supportive but doubts regarding the word "true" | 4 |
| | | Broadly supportive but doubts regarding the word "fair" | 1 |
| Negative | 11 | Mildly opposed | 2 |
| | | Opposed because "true" was misleading | 1 |
| | | Opposed because the phrase was ambiguous | 3 |
| | | Disliked it, but resigned to it | 1 |
| Totals | 25 | General distaste for it | 4 |

As Table 1 highlights, the auditors' comments on the phrase "true and fair" covered a spectrum of views. The interviewees could be split roughly between 14 of them accepting the phrase and 11 of them rejecting it. However, a majority of those who broadly accepted it, expressed reservations or indifference about the phrase. Therefore, this study has highlighted some concern as to whether the phrase "a true and fair view" really reflects the message the auditor is trying to communicate. These findings contrast with those of Parker and Nobes,⁴⁸ who concluded that: "It is auditors who continue to support the TFV [a true and fair view] requirement and to

make most use of it in practice" (p. 358). This study appears to show that auditors have major reservations regarding the phrase.

Earlier we identified four potential classifications of the true and fair concept. The following section reports the comments relevant to those classifications:

(1) "True and fair" as a softening of "true and correct". One person regarded "true and fair" as "preferable to 'true and correct' because correct implies accuracy and so on". Another person referred to "degrees of latitude or whatever ... contained in true and fair". As we have already seen, a number of interviewees had reservations about, the degree of precision implied by the word "true".

(2) The concept of "true and fair" as imposing an obligation to avoid the misleading was expressed in a variety of ways. One interviewee explicitly referred to "substance over form" as equating to the fact that the financial statements must be "fair" as well as "true".

(3) The concept of "true and fair" as implying freedom from bias was explored with a specific question as to whether bias in the financial statements is compatible with "a true and fair view". Perhaps rather surprisingly, a substantial majority answered affirmatively. Comments included: "You will always have bias"; "I don't think we [the auditors] really eliminate bias"; "a certain amount of management bias is going to be present"; "Bias is something we live with"; and "Bias will always be there". This acceptance of the inevitability of bias was accompanied by a feeling that bias must be confined within certain limits: "If you minimise bias and control bias then I think the financial statement can be fair". Those who saw bias as incompatible with "a true and fair view" also seemed to accept some element of bias as inevitable. One person considered that: "Fair means no undue bias – bias capable of distorting the view", whilst another person stated:

Our job is to challenge the assertions the management make. In my experience it is very rare that there is a situation where there is nothing to challenge.

Therefore, it can be seen that the findings in this study seem to challenge the notion that "a true and fair view" implies "freedom from bias".

(4) Only one interviewee referred explicitly to the idea that the true and fair concept implied acceptance of the authority of the professional bodies. This person stated that: "We are halfway to saying the ASC thing about true and fair includes being prepared in accordance with the standards".

References to the application of the true and fair view concept throughout the European Community included two elements:

(1) A view that other European countries had been forced into accepting the concept. One view was that it had been necessary to "try to sell it to the continentals", the result being that "we seem to have managed to stitch the rest of Europe up under true and fair now".

(2) A view that the concept would be applied differently in different Community countries. Comments include: "I know it's difficult to try and convince the Europeans what you mean by true and fair"; "What is more worrying is ... quite how the thing

translates across the multitude of European languages"; but "Most of our continental brethren use something like true and fair in a different way".

To summarize, most of those interviewed were unenthusiastic about the phrase "a true and fair view". This distaste was mainly because of the spurious precision implied by the word "true" and the ambiguity of the formula. Those who commented on the export of the concept to other European Community countries saw negative implications.

Conclusions

The study has adopted an essentially qualitative approach to examine a concept central to accounting practice in the European Community. The nature of the approach has elicited a large number of interesting comments from senior UK practitioners. The findings appear to show that the phrase "a true and fair view" arouses little enthusiasm amongst those in the United Kingdom most concerned with its application. These practitioners vary in their interpretation of the concept; they saw it as vague and ambiguous, and a significant number of them found it misleading. Those who considered in the context of European harmonization saw it as an alien concept for many European Community member states and thought that it was likely to be applied inconsistently. Therefore, the ambiguity and cultural dependence of the phrase appear to make it an inappropriate basis for transnational accounting harmonization.

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Disclosure Strategies for Harmonization of International Accounting Standards

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Abstract: *The International Accounting Standards Committee (IASC) improvements project and related standards are assessed from the disclosure perspective of the efficient markets and earnings management research. Using a cost/benefit criterion, specific disclosure solutions are advocated to enhance the comparability and harmonization of international financial reporting. Finally, specific comments on our disclosure solutions by the IASC Chairperson, Arthur Wyatt, are integrated into this paper. He has visualized a financial reporting continuum where the IASC approach is nearer the one end of a complete set of definitive standards and our solution is nearer the other end of total disclosure. Strategies to reconcile these approaches toward a harmonization goal are discussed.*

In 1988 the International Accounting Standards Committee (IASC, 1990) started an improvements project (originally known as the comparability project) to reduce the number of alternative accounting methods in its existing standards. The goal is to improve the harmonization of international accounting principles by restricting accounting alternatives to approximately six areas. The focus is to develop professional standards, not detailed rules. A related benefit would be to reverse the trend in the USA over the last 25 years where the strategy has focused upon beating the standard setters (Fleming, 1991).

These efforts should be guided by the overall goal of improving the efficiency of international financial markets, not just standardization of international accounting principles for the sake of standardization. International financial markets and foreign operations have developed without such standardization (Rivera, 1989), and Choi and Bavishi (1982) and Most (1969) found fundamental differences in European

and US financial reports to be less extensive than expected. Also, Meek (1983) found similar responses in US stock prices to earnings announcements regardless of whether those earnings were measured in foreign or US generally accepted accounting principles (GAAP).

International capital markets have grown in importance. In 1975, there were approximately \$66 billion of transactions both in US securities by foreign investors and in foreign securities by US investors. By 1989, this figure had grown to approximately \$5.4 trillion (Lochner, 1991). Thus, improved efficiency in international capital markets is important. However, in the Third World countries there are no structured or sophisticated capital markets (Choi and Mueller, 1978). Accounting principles for those countries are thus beyond the scope of this paper.

Disclosure Perspective

In order to improve the efficiency of international capital markets, a disclosure perspective or solution is advocated. This perspective is consistent with Beaver's (1973) conclusion from the efficient market research that many financial reporting issues are trivial and do not justify the use of the Financial Accounting Standards Board (FASB) resources. Such issues have two properties: (1) there are no cost differences in reporting alternative accounting methods, and (2) there are no significant costs to users in converting from one method to another. Thus the disclosure perspective or solution advocated by Beaver (1973) is to report one method, with sufficient footnote disclosure to permit adjustment to other acceptable alternatives and let the market interpret implications of the data for security prices. Since one of the purposes of financial statement data is to pre-empt or prevent abnormal returns from insider trading, Beaver's (1973) disclosure policy is also appropriate, so that if there are no additional costs of disclosure to the firm the item in question ought to be disclosed.

This disclosure perspective or solution has also been advocated for the earnings management problem. Schipper (1989) has defined earnings management as disclosure management which is a planned intervention in the external reporting process to achieve some private gain. A typical strategy takes deliberate steps within the accepted principles in order to achieve a desired level of reported earnings (Davidson et al., 1987). Schipper (1989) stated that one condition of earnings management models is that users cannot or do not care to undo earnings management because of asymmetric information, i.e., the manager knows something that others do not. Thus, a key model condition is some form of blocked communication.

Blocked communication indicates that managers cannot communicate all their private information. Thus, partial communication is observed with earnings management models. These models include assumptions as to proprietary disclosure costs, accounting rules, and other institutional or contractual constraints that provide restrictions on communication channels. Without management incentives for partial communication, there would be no earnings management. (Concerning such management incentives, typical executive compensation plans include stock option plans and bonuses dependent upon rising stock prices and net income levels.) Schipper

(1989) stated that blocked communication would not exist if the information to undo the earnings management were public and easy to use, i.e. the disclosure solution recommended here to improve the efficiency of international capital markets.

Disclosing management discretion over accounting method choices and related amounts should also be a major focus of international accounting standard-setting efforts. If such standards provide sufficient information to unblock communication and thus undo earnings management, the efficiency of the international capital markets should be improved. Of course, the terms used in communicating such information must be consistent and the IASC standards and exposure drafts have made a good start in establishing an international dictionary of accounting terms (Horner, 1986).

Accordingly, the major focus of this paper is to suggest disclosure solutions so that sophisticated users in broad international capital markets have sufficient information to undo accounting method choices. The goal is to enhance comparability of financial reports for various investing and lending decisions. Such disclosure solutions must also be evaluated from the key qualitative characteristic of accounting information, the cost/benefit criterion (Elliott and Jacobson, 1991). Thus, specific disclosure solutions related to the IASC standards and information exposure drafts are offered and analyzed with the cost/benefit criterion. Then, related disclosure issues not yet covered by the IASC are analyzed. Hopefully, the IASC improvements project would focus upon these key, remaining disclosure issues in order to improve the efficiency of international capital markets.

Specific Disclosure Solutions for IASC Standards and Exposure Drafts

This section is organized by the IASC standards and related exposure drafts with three analytical perspectives: (a) a brief description of the IASC standards and exposure drafts with comparisons to US GAAP; (b) a recommended disclosure solution derived from undoing choices of alternative accounting methods in order to improve the efficiency of international capital markets; and (c) an assessment of the cost/benefit characteristics of the proposed disclosure solution. For example, the cost/benefit criterion will be designated favorable if the recommended information to be disclosed already exists in a company's information systems. The analysis is summarized in Table 1.

Table 1. An analysis of disclosure solutions for ISAC standards and exposure drafts

1. IAS No. 1: Disclosure of Accounting Policies

- a. This standard is similar to *Accounting Principles Board (APB) Opinion 22* in the USA which requires the disclosure of accounting policies that are selected from permitted alternatives, but does not require disclosure if there are no permitted alternatives. Also, US GAAP do not formally require the presentation of financial statements for the preceding period as required by *IAS No. 1*. However, US companies generally issue, and Securities and Exchange Commission (SEC) rules require, the disclosure of comparative financial information.
- b. *Disclosure Solution.* Implementation differences may arise when US GAAP permit only a single method and international standards permit additional methods, or vice versa. In these circumstances, disclosure of the accounting policy should be required if alternatives are allowed under either US GAAP or IASs.

Table 1. *continued*

c. *Cost/Benefit.* Favorable: no significant costs are incurred in reporting such accounting method choices.

2. *IAS No 2: Valuation and Presentation of Historical Cost Inventories to be replaced by Exposure Draft (ED):*
ED 38: Inventories

a. This ED proposes that only first-in, first-out (FIFO), weighted average, or specific identification methods may be used for historical cost inventories. Last-in, last-out (LIFO) and base stock methods would no longer be permitted (but are currently allowed by *IAS No. 2*).

b. *Disclosure Solution.* Disclose the differences between the method chosen and current replacement cost so that the user can undo the choice of inventory methods. This disclosure would be similar to the disclosure required by the SEC of the differences between LIFO and a non-LIFO method (which is often current replacement cost).

c. *Cost/Benefit.* Favorable: with the use of computerized inventory systems, minimal costs should be incurred to compute the current replacement cost of inventories. Also, any companies that use LIFO for financial reporting purposes and can elect LIFO for tax purposes would have significant tax-saving benefits in times of inflation and should not be precluded from using LIFO as the ED proposes.

3. *IAS NO. 3 and IAS No. 27: Consolidated Financial Statements,*
IAS No. 22: Accounting for Business Combinations, and
IAS No. 28 Accounting for Investments in Associates

a. These standards are similar to *Accounting Research Bulletin (ARB) 51, APB Options Nos. 16 and 18, and Statement of Financial Accounting Standard (SFAS) 94*, except that (1) disclosure of the proportion of assets and liabilities to which different policies have been applied is required, (2) pooling is less common, (3) no maximum life is specified for the amortization of goodwill, and (4) negative goodwill may either be treated as deferred income and recognized in income on a systematic basis or allocated to depreciable non-monetary assets in proportion to their fair values. US GAAP do not require the proportional disclosure, specifies a maximum life of 40 years for the amortization of goodwill, and negative goodwill may only be allocated to non-current assets (except marketable securities) and, if the allocation reduces the non-current assets to zero, the remainder is classified as a deferred credit and amortized systematically to income.

b. *Disclosure Solution.* Disclose the proportion of assets and liabilities to which different policies have been applied and the amount, and treatment, of goodwill. Also, almost all majority owned subsidiaries are now consolidated. Additional disclosures should be required for unconsolidated financial statements of the few subsidiaries which are not consolidated. Also, the continued, limited availability of the pooling method can significantly distort comparability when historical costs are outdated. The disclosure solution should focus upon the fair values of all the acquired assets, especially intangible assets.

c. *Cost/Benefit.* Favorable: all information needed for the above recommendations should be available in the company's information system. However, this disclosure solution could possibly be unfavorable if there are significant valuation issues with intangible assets (discussed later in this paper).

4. *IAS No. 4: Depreciation Accounting and*
IAS No. 16: Accounting for Property, Plant and Equipment

a. These standards are similar to *ARB 43 and APB Opinion No. 12*. For each major class of depreciable assets, the useful lives or the depreciation rates used, total depreciation allocated for this period, and accumulated depreciation must be disclosed. US GAAP do not require such disclosures for each major class of depreciable asset, but do require disclosure of depreciation expense for the period and accumulated depreciation, and the SEC requires disclosure of the rates used in computing depreciation. Also, nonmonetary exchanges may be accounted for differently but the amounts are unlikely to be material. If there is a permanent impairment of assets, the assets should be reduced to their recoverable amount. Assets may be revalued and revaluation differences must be reported directly into shareholders' equity.

b. *Disclosure Solution.* For comparability purposes, depreciation is often not an issue in the US because over 75% of the companies use the straight-line method (Bazley et al., 1991). For US and foreign companies that do not use straight-line depreciation, differences to convert to straight-line should be disclosed. For companies that have revalued or impaired assets, these amounts are disclosed and thus property, plant, and equipment may be converted to historical cost amounts.

Table 1. *continued*

c. *Cost/Benefit.* Favorable: the costs should be minimal with the availability of depreciation software that allows alternative selections. Also, the revaluation and impairment amounts are already disclosed. For conversions to current values, refer to the subsequent *IAS No. 15* discussion concerning the effects of changing prices.

5. *IAS No. 5: Information to be Disclosed in Financial Statements*
IAS No. 13: Presentation of Current Assets and Current Liabilities, and
IAS No. 31: Financial Reporting of Interests in Joint Ventures

a. These standards are generally consistent with US GAAP relating to the basic set of financial statements and related explanatory material.

b. *Disclosure Solution.* Not needed.

c. *Cost/Benefit.* Favorable: no additional disclosures are needed.

6. *IAS No 7 Statement of Changes in Financial Position to be replaced by:*
ED 36: Cash Flow Statements

a. The ED is similar to SFAS No. 95.

b. *Disclosure Solution.* No additional disclosures are needed if the ED is adopted.

c. *Cost/Benefit.* Favorable: no additional disclosures are needed.

7. *IAS No. 8: Unusual and Prior Period Items and Changes in Accounting Principles*

a. This standard follows *APB Opinion No 9* and *SFAS No. 16*, except that prior period adjustments may be reported either in retained earnings or current income.

b. *Disclosure Solution.* No additional information is needed as long as prior period adjustments reported in current income are clearly disclosed.

c. *Cost/Benefit.* Favorable: the information is already available in the company's information system.

8. *IAS No 9: Accounting for Research and Development to be revised by:*
ED 37 Research and Development Activities

a. *IAS No. 9* has five criteria and the ED proposes three criteria for capitalizing development costs. Non-qualifying development costs and all research costs must be expensed as incurred.

b. *Disclosure Solution.* Disclose the total research and development costs incurred during the current period and any capitalized amounts so that the user can undo any capitalization or expense choices.

c. *Cost/Benefit.* Favorable: all relevant information should already exist in the company's information system.

9. *IAS No. 10: Contingencies and Subsequent Events and*
IAS No. 30: Disclosures in Financial Statements of Banks and Similar Institutions

a. These standards are consistent with *SFAS No. 5* guidelines. *IAS No. 30* eliminates banks' practices of using hidden reserves for loan losses and general banking risks.

b. *Disclosure Solution.* Disclose all contingent liabilities, including any hidden reserves used in various foreign countries. For example, using hidden reserves to smooth out yearly earnings fluctuations is considered to be a sound practice in Germany and Switzerland where investors put a premium on earnings stability (Horner, 1986).

c. *Cost/Benefit.* Favorable: all relevant information should already exist in the company's information system.

10. *IAS No. 11: Accounting for Construction Contracts and*
IAS No. 18: Revenue Recognition

a. These standards are consistent with *ARB No. 45*, *ARB No. 43*, and *AICPA Statement of Position 81-1* for the realization, accrual and matching concepts, except that there is no requirement to use the percentage of completion method when specified criteria are met.

Table 1. *continued*

b. *Disclosure Solution.* The specific amounts of revenue and related expenses should be disclosed when there are combinations of revenue recognition methods used in one set of financial statements.

c. *Cost/Benefit.* Favorable: all relevant information should already exist in the company's information system.

11. *IAS No 12: Accounting for Taxes on Income* to be revised by:
ED 33: Accounting for Taxes on Income

a. the ED would require use of the liability method and remove the choice of using the deferral method consistent with *SFAS No. 109*.

b. *Disclosure Solution.* Disclose the amount of the tax obligation (without any deferred taxes) and the amount paid each year. Note that the elimination of deferred taxes has been recommended by academics (Smith, 1990), practitioners (Seidler, 1990) and countries, e.g., Japan, France, and Brazil (Dewhurst, 1988).

c. *Cost/Benefit.* Favorable: all relevant information should already exist in the company's information system. The recommendation to eliminate deferred taxes is consistent with the idea that deferred taxes do not add any significant benefits to users' analyses, and significant compliance costs would be eliminated.

12. *IAS No. 14: Reporting Financial Information by Segment*

a. This standard is consistent with *SFAS No. 14*.

b. *Disclosure Solution:* not needed.

c. *Cost/Benefit.* Favorable: no additional disclosures are needed.

13. *IAS No. 15: Information Reflecting the Effects of Changing Prices*

a. This standard is generally consistent with *SFAS No. 33* which is optional in the USA, although the disclosures are less extensive. Practically no US companies now disclose this type of data (Grove et al., 1990).

b. *Disclosure Solution.* The disclosure of current replacement cost for inventories has already been recommended in our analysis. The other major difference between historical cost and replacement cost would be for property, plant, and equipment (PPE). Some international companies already use a revaluation amount under *IAS No. 16* as previously discussed. The disclosure solution would require that differences between historical costs and current replacement costs be provided for all PPE. The other significant asset valuation issue relates to intangible assets discussed later in this paper. Also, there is a required inflation discussion in the management discussion and analysis (MDA) section of US annual reports which should be extended to international companies.

c. *Cost/Benefit.* Probably favorable: however, this disclosure solution may involve significant additional data collection costs for many companies. Refer to the discussion of intangible asset reporting issues later in this paper.

14. *IAS No. 17: Accounting for Leases*

a. This standard generally follows the guidelines of *SFAS No. 13*.

b. *Disclosure Solution.* Disclose the lease payments for the current year, for each of the next five years, and the total thereafter, separately for operating and capital leases. The user may then do a net present value calculation to convert such off-balance-sheet financing of operating leases to on-balance-sheet liabilities and assets. This area is becoming more relevant as more companies structure lease contracts to be operating leases (Bazley et al., 1991; Brownlee et al., 1990).

c. *Cost/Benefit.* Favorable: all relevant information should already exist in the company's information system.

15. *IAS No 19: Accounting for Retirement Benefits and*
IAS No 26: Accounting and Reporting by Retirement Benefit Plans

a. These standards are generally consistent with the guidelines of *SFAS Nos. 35 and 87*.

b. *Disclosure Solution.* No additional disclosures are needed as long as the following items are clearly communicated: pension expense, pension costs paid, pension plan assets and related liabilities, the actual return on plan assets, and interest rate assumptions used.

Table 1. *continued*

c. *Cost/Benefit.* Favorable: all relevant information should already exist in the company's information system.

16. *IAS No. 20 Accounting for Government Grants and Disclosure of Government Assistance*

a. Government grants are included in income when the corresponding costs intended to be compensated by the grant are incurred. There is no comparable US standard.

b. *Disclosure Solution.* Require disclosure of all government grants.

c. *Cost/Benefit.* Favorable: all relevant information should be available in the company's information system.

17. *IAS No. 21: Accounting for the Effects of Changes in Foreign Exchange Rates and IAS No. 29: Financial Reporting in Hyperinflationary Economies*

a. *IAS No. 21* is similar to *SFAS No. 52*, except that exchange rate differences from long-term monetary items can be deferred and recognized in income of current and future periods. *IAS No. 29* requires restated price level gains or losses from the net monetary position to be included in net income.

b. *Disclosure Solution.* Disclose all income statement amounts from the various translations cited above.

c. *Cost/Benefit.* Favorable: these income statement items are already available and merely need adequate disclosure.

18. *IAS No 23: Capitalization of Borrowing Costs* to be replaced by:

ED 39: Capitalization of Borrowing Costs

a. *IAS No. 23* makes capitalization optional. The ED limits the amounts capitalized to the total amount of borrowing costs incurred and is reduced by the amount of interest income earned by the underlying asset, if any.

b. *Disclosure Solution.* Disclose, for the period: the total interest costs, the amounts capitalized, the amounts expensed, and the interest paid.

c. *Cost/Benefit.* Favorable: all the relevant information should be available in the company's information system.

19. *IAS No 24 Related Party Disclosures*

a. This standard is similar to *SFAS No. 57*

b. *Disclosure Solution.* Not needed.

c. *Cost/Benefit.* Favorable: as no additional disclosures are needed

20. *IAS No. 25: Accounting for Investments*

a. This standard is similar to *SFAS No. 12*, except that current marketable securities may be carried at market value or the lower of cost and market and it encompasses other types of investments which may also be based on market values.

b. *Disclosure Solution.* Disclose the balance sheet and income statement differences between the accounting methods used and the fair market values of all such investments.

c. *Cost/Benefit.* Favorable: the fair market values of such investments should be readily available unless there is no established market for the asset. Similar issues arise for intangible asset valuation later in this paper.

Note: This analysis focuses upon the general provisions of the various statements, and the conclusions are valid for someone applying the accounting principles in good faith. However, the IASs are usually written in a more general way than US GAAP and, therefore, would allow more creative application of accounting principles. For example, two of the US criteria for capitalizing leases specify that the lease term is "75% or more of the estimated economic life" of the asset, and the present value of the minimum lease payments "equals or exceeds 90%" of the fair value of the property. In contrast, the IAS uses criteria that specify that "the lease term is for the major part of the useful life of the asset" and the present value "is greater than or equal to substantially all of the fair value."

Most of the Table 1 disclosure solutions have favorable cost/benefit analyses. Potentially unfavorable ones relate to property, plant, and equipment (PPE) and intangible asset valuation issues. These items are elaborated in the following section of this paper.

Related Disclosure Issues to Improve International Capital Markets' Efficiency

Most of the IAS standards had favorable cost/benefit criteria concerning disclosure solutions that reconciled choices of different accounting methods in order to improve the efficiency of international capital markets. Thus, the IASC improvements project should not devote additional significant efforts to the reduction of accounting alternatives in the IASC standards at this time. Rather, it should focus upon potentially unfavorable cost/benefit impacts of major disclosure issues. For example, one major issue noted in Table 1 related to intangible assets.

As Elliott (1992) and Elliott and Jacobson (1991) have observed, mankind has moved from the industrial era into the information technology era, where the focus is upon intangible values. They argue that the traditional financial accounting model is based upon the old industrial era and is not providing all the relevant information needed in the current information technology era. For example, when Phillip Morris acquired Kraft in 1988 for \$12.9 billion, it recorded goodwill of \$11.6 billion. Similarly, when Time bought Warner Communications for \$14 billion, goodwill of \$11 billion was recorded (Bazley et al., 1991).

In these cases, the traditional financial accounting model did not provide any specific intangible asset values for 90% and 79%, respectively, of two major company purchases. Conversely, the provision of comparable current values for PPE and other tangible assets would represent only 10 percent and 21 percent of the above company purchases. Current values for tangible assets are becoming relatively immaterial in this information technology era.

Accordingly, the IASC improvements project should be devoting more efforts to intangible asset valuation and related amortization issues. Many companies focus upon these issues when they purchase companies in order to create tax deductions since goodwill is not deductible in the USA. The General Accounting Office (GAO, 1991) has identified approximately 175 purchased intangible assets that taxpayers in the USA have claimed as separate and distinguishable from goodwill with reasonably accurate useful lives. This list was prepared by the GAO from an analysis of unresolved or open Internal Revenue Service (IRS) cases in 1989.

The GAO list includes \$23.5 billion of non-goodwill intangible assets, such as the following: core deposits of financial institutions, newspaper and magazine subscription lists, customer lists, covenants not to compete, leases, software, technical manuals and drawings, workforce in place, recipes, non-union status, construction permits, and trained staff. Several related tax court cases have agreed with the taxpayers' intangible asset valuation methods for subscription lists and core deposits (Greisman, 1991). Furthermore, there are well-known appraisal and valuation methods

for certain intangible assets, such as "relief from royalty" for brand names (King and Cook, 1990) and replacement costs for human resources (Grove et al., 1977).

The IRS is acknowledging such arguments by acquiescing to a legislative proposal that would allow tax deductions over a 14 year period for the above types of intangibles plus goodwill, going concern values, business books and records, operating systems and other information bases, any formula, process, design, know-how or similar items, and franchises. The bill, however, specifically excludes self-created assets, professional sports franchises and leasehold interests (Greisman, 1991).

Intangible asset valuation is a significant cost/benefit issue, both for purchased and self-created assets. The disclosure solution would focus upon intangible values and any related estimated lives for comparability purposes, regardless of the specific choice to capitalize or expense. A similar disclosure solution has been recommended for goodwill accounting (Duvall et al., 1992).

Intangibles also help drive the concepts of shareholder value (Rappaport, 1986). These concepts include value growth duration, sales growth, operating profit margin, income tax rate, working capital investment, fixed capital investment, and cost of capital. Shareholder value can report quite different results from the traditional financial accounting model. For example, a company may have increases in all of the following traditional performance measures, earnings per share, return on assets, and return on equity, but still show declining shareholder value (Elliott and Jacobson, 1991).

Intangibles also are the focus of the new emphasis on world-class competitor status. To achieve such status and success, management needs to emphasize information era assets such as human resources, research and development, information systems, data on customers' needs and capacity for innovation, shorter product design and production cycles, the control and minimization of related product life cycle costs, the just-in-time goal of minimal or zero inventories, improved quality, and greater customer satisfaction (Elliott and Jacobson, 1991). The next section summarizes implications for the IASC improvements project.

Summary

Many of the traditional financial accounting issues, as discussed here in Table 1 with the IAS standards and exposure drafts, are easily resolved with additional disclosures. Harmonization of international accounting standards is thus by-product of such disclosures. The criterion used in this analysis was a positive cost/benefit result for the disclosure solutions. These recommended solutions enhanced the investor's and lender's ability to undo choices of accounting method alternatives and, accordingly, to improve the efficiency of international capital markets.

Also, in an information era where world-class competition is dependent upon the creation of intangible asset values, the standard-setting process should focus upon helping the sophisticated user assess such progress and related rates of change in international companies. Thus, the reporting and harmonization of disclosures for intangible assets should be a major focus of the IASC (and the FASB) standard-setting efforts.

The typical opposing argument of company confidentiality for these types of key assets (or critical success factors) did not hold in the oil industry. For several years, SFAS 69 has required the disclosure of the key assets of oil and gas reserves and related net present values and finding costs. Yet US oil companies are still world-class competitors. Also, the confidentiality argument is at odds with the Malcolm Baldrige National Quality Award, which requires the sharing of relevant quality information by the award winners. In attempting to develop this type of harmonization, the IASC improvements project hopefully will help overcome criticisms concerning the relevance of current financial accounting standards. The last section integrates comments on our disclosure solutions by the IASC Chairperson, Art Wyatt.

Integration of IASC Chairperson's Comments

In commenting upon our proposed disclosure solutions in this paper, the IASC Chairperson, Arthur Wyatt, (1992) has visualized a continuum with a complete set of definitive standards at one extreme and only disclosure at the other extreme. His recommendation for IASC standards would be closer to, but a few steps away from, the standards end. For example, his ideal IASC standards would be nowhere as detailed as those of the FASB, but would provide more specific standards than our disclosure solution. However, our disclosure solution is nowhere near the other end of the continuum where financial reports would be mostly narratives, possibly with supporting schedules, but without formal financial statements.

The solutions proposed by Wyatt and us just differ in the relative efficiency of approaches to establishing international accounting standards. Wyatt advocates a reasonable mix of definitive standards and adequate disclosures and we agree with this proposal. In fact, our recommendations in Table 1 are based upon disclosure reconciliations between a reasonable number of alternatives provided in definitive standards. However, we argue that the cost/benefit criterion used in our Table 1 analysis would indicate that the relative efficiency for establishing international accounting standards lies more toward the disclosure end of the continuum than the definitive standard end of the continuum..

Wyatt (1992) has indicated that at present the IASC Standards contain approximately 35 acceptable alternatives. The first phase of the IASC improvement project is attempting to eliminate about 25 of these alternatives. A second phase would then try to reduce the remaining alternatives to 5 or 6. At that point on the continuum, Wyatt believes that there would be a reasonable balance between definitive standards and acceptable alternatives with improved disclosure standards for the latter.

Wyatt (1992b) argues that with 35 alternatives, financial statement users have far too many accounting divergence disclosures (as contrasted to informative disclosures, e.g. contingencies, policies) to be able to process this information with any efficiency. From the perspective of sophisticated users in relatively efficient international capital markets of developed countries, we would disagree and keep the existing alternatives as analysed in Table 1. We would initially focus upon more significant financial reporting issues, e.g. intangible assets, historical cost alternatives, and then attempt to resolve remaining accounting divergence issues.

Once these more significant issues were resolved by the IASC, we would recommend a return to the improvement project and more focus on the users in international capital markets of developing countries. As Wyatt emphasized, our solutions diverge only in relative efficiencies along the continuum and related priorities. The common goal is for financial reporting to evolve to a harmonized core of definitive standards in order to improve the efficiency of capital markets in both developed and developing countries.

Wyatt (1992b) has also stated that earnings (and disclosure) management is more a concern within a country than internationally, due to disclosure differences from laws, customs, and the state of evolution of accounting principles. Thus, additional disclosures are more difficult to achieve in some countries, e.g. Germany and Japan, because of a history of confidentiality and because of narrow capital markets with fewer players. The cost/benefit criteria would provide some guidance for this type of country bias against disclosure.

The traditional non-disclosure approach in these countries would be assessed against the evolving need for more efficient international capital markets by various entities in these countries, especially the members of the International Organization of Securities Commission (IOSCO). Members are either the securities regulators or the stock exchanges in various countries. For example, the US member is the Securities and Exchange Commission.

The IOSCO has encouraged the IASC in its improvement project to reduce accounting methods alternatives. The IOSCO's general goal is to have securities regulators in member countries require that financial statements prepared by companies attempting to raise capital in those countries be in accordance with or reconciled to international accounting standards. Consistent with this IOSCO goal, in Table 1 we have attempted to provide disclosure solutions for reconciling accounting method choices to existing international accounting standards from a cost/benefit perspective.

To meet the IOSCO and other sophisticated users' needs, we advocate that major financial reporting issues be addressed initially before accounting method alternatives are reduced. In addition to the major issue of unreported intangible assets, the issue of non-historical cost accounting needs to be analyzed. For example, the Fourth Directive (1978) of the European Community may be appropriate for IASC to follow, i.e. the goal is for the fundamental measurement method used in financial statements to be comparable. Thus, if an alternative measurement method to historical cost accounting is used in the financial statements (e.g. replacement cost accounting in the Netherlands), then sufficient information to reconcile these statements to historical cost accounting must be disclosed in the footnotes.

In summary, Wyatt (1992b) has observed that there are suitable conditions to narrow the range of differences in standards on a number of issues and to rely on adequate disclosures when narrowing is not possible. We would agree but would put more emphasis on the adequate disclosure strategy initially and, then focus upon the reduction of differences in standards as needed. As Wyatt has indicated, it is a matter of priorities with scarce resource challenges. The IASC is a group of volunteers from 13 countries and meets only 12 days a year with annual budget of \$800 000. Finally, with the assistance of the IOSCO, we all believe that the IASC has a real

chance to make a significant impact and improvement in the efficiency of international capital markets.

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International Versus Domestic Managerial Performance Evaluation: Some Evidence

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Key words: Managerial performance evaluation; Transfer pricing; Evaluation of subsidiaries

Abstract: *Managers of domestic subsidiaries should be evaluated using different criteria than those applied to their counterparts in international subsidiaries due to differing economic, political and operating environments. However, prior research has found few or no differences between domestic and international performance evaluation processes, and that return on investment is a primary criterion. This survey of US-based companies that transfer goods domestically and/or internationally shows that, contrary to prior findings, the importance of specific performance criteria varies with the nature of the evaluation. However, these criteria are not necessarily those recommended in theory. The findings of the current study indicate that evaluation processes do differ for domestic and international managers, both in the relative importance assigned to each criterion, and in the absolute importance of secondary criteria. Evaluation measures are also affected by the type of transfer pricing method used domestically, with cost-based companies relying more on general measures than market-based and negotiation firms. Internationally, however, the transfer pricing method used is not related to the performance measures preferred by the multinational corporations.*

The evaluation of managerial performance is a difficult process even under ideal circumstances. Performance evaluation measures must be perceived as fair by both employer and employee, while simultaneously encouraging goal congruence, maintaining managerial autonomy, and increasing motivation. When a manager is responsible for an international subsidiary or segment in a multinational corporation (MNC), difficulties with evaluation are compounded. Often, distinctions are not made between the individual manager's performance and the performance of the

subsidiary; existing performance evaluation systems are often inadequate for international operations; and problems with currency translation and volatility occur (Morsicato and Radebaugh, 1979; Tse, 1979; Choi and Czechowicz, 1983). Different economic, political, and operating environments dictate that separate measures should be used to evaluate domestic and international managers. However, most researchers (Mauriel, 1969; Robbins and Stobaugh, 1973; Moriscato, 1980; Abdallah, 1984) have found few or no differences between domestic and international evaluation processes.

Performance evaluation in international settings is facilitated using information provided by a company's transfer pricing system.¹ However, the transfer pricing method also affects the measure used to evaluate managerial and subsidiary performance, more so internationally than domestically. For example, a transfer pricing method implemented primarily to minimize tax and tariff payments can adversely affect subsidiary profit. This invalidates subsidiary profit as a performance measure since the manager cannot control the transfer price and therefore cannot control profit. Such reciprocal relationships affect both the criteria underlying performance evaluation and the evaluation process itself. Consequently, managerial motivation can be adversely affected when transfer pricing information is used in performance evaluation measures (Knowles and Mathur, 1985).

The performance evaluation measures used by US-based companies, and the relationship of those measures to both domestic and international transfer pricing methods, are investigated in this study. Contrary to prior findings, the importance of specific performance criteria varies with the nature of the evaluation. However, the criteria used in practice are not necessarily those recommended in the theory.

Prior Studies

Prior studies on MNC performance evaluation (Table 1) show little difference in the criteria used for international and domestic subsidiary and manager evaluation. These findings contradict current theory that the differences between domestic and international environments require the use of different standards for evaluation (Robbins and Stobaugh, 1973; Morsicato and Radebaugh, 1979; Tse, 1979; Choi and Czechowicz, 1983; Abdallah, 1986).

The American Accounting Association (AAA) Committee on International Accounting (1973) finds that international transactions by US-based MNCs are rapidly increasing, but that performance evaluation systems are not keeping pace. A clear need exists for "improved performance evaluation systems [but] progress in this direction appears to be slow, although there is now a fair degree of recognition that the profit center concept is not appropriate in the international arena" (p. 158). The recognition of this need has not been translated into improved evaluation systems, as the following studies on performance evaluation and transfer pricing indicate.

In interviews with MNC financial officers, Robbins and Stobaugh (1973) find that both domestic and international segments are evaluated using the same performance measures, particularly return on investment (ROI). Other common measures are return on sales, sales growth, and adherence to budgets. Given its

Table 1. Prior empirical studies on MNC performance evaluation

| <i>Study</i> | <i>Methodology</i> | <i>Sample Size</i> | <i>Findings</i> |
|-----------------------------|--------------------|--------------------|---|
| Mauriel (1969) | Interview | 15 | No difference in measures used for international and domestic performance evaluation: profit, ROI |
| McInnes (1971) | Survey | 30 | Little difference in domestic and international financial reporting systems: ROI, budgets |
| FERF (1971) | Survey | 34 | International measures: budget vs. actual profit, ROI |
| Robbins and Stobaugh (1973) | Interview/Archival | 39 150 | No difference in domestic and international subsidiary performance evaluation: ROI supplemented by budgets |
| Morsicato (1980) | Survey/Interviews | 70 33 | No difference in domestic and international measures: profit, ROI, budget comparisons. No difference in measures for manager and subsidiary performance |
| Choi and Czechowicz (1983) | Survey/Interviews | 88 | Manager evaluation: budget vs. actual profit/sale, ROS, ROI. Subsidiary evaluation: budget vs. actual profit, ROI, budget vs. actual sale |
| Abdallah (1984) | Survey | 56 | Little difference in domestic and international measures: budget vs. actual profit, profit, ROI. No difference in measures for manager and subsidiary performance |
| Schoenfeld (1986) | Interviews | 20 | Manager and subsidiary evaluations separate: actual vs. budget comparisons |

inherent problems,² they suggest that ROI be replaced with budget comparisons as the primary measure of performance in non-US segment.

Morsicato (1980) finds no difference between domestic and international performance evaluation measures, or between manager and subsidiary evaluation. Differences by MNC size are found, however; MNCs with large foreign sales emphasize the budget rather than ROI. Medium-sized MNCs utilize budget versus actual profit, ROI, and then profit as their primary measures, while MNCs with fewer foreign sales use ROI as their primary measure, followed by profit and budget versus actual profit.

In a survey of MNCs, Choi and Czechowicz (1983) determine that performance evaluation exists to maintain a segment's profitability, and only secondarily to assess the performance of the segment manager. In evaluating segment managers in US-based MNCs, financial criteria include budget comparisons to either profit or sales,

return on sales, ROI, and return on assets. Non-financial criteria include increasing marketing market share, the relationship to the host country government, and quality control. These criteria are very similar to those used to evaluate the performance of the segment.

When companies transfer goods internally (domestically or internationally), a price is derived for the goods transferred. This transfer price can be determined in many ways, including market pricing, negotiation, and cost based methods.³ Some common objectives of domestic and international transfer pricing include profit maximization, performance evaluation, and goal congruence. International transfer pricing also seeks to minimize tariff and tax payments while complying with US and non-US regulations.

Performance evaluation criteria often conflict with the objectives of an MNC's transfer pricing method. In a survey of US-based MNCs, Yunker (1983) identifies the most common specific evaluation-criteria as meeting plan goals, adherence to budgets, sales growth, profits, and cost reduction. The primary general criterion is financial measures expressed in US dollars. Yunker suggests that MNCs establish performance evaluation criteria based on the transfer pricing method chosen. MNCs which do not use a market-based transfer price tend "to put less emphasis on profit oriented performance evaluation criteria in the evaluation of the subsidiary managers" (p. 51).

When evaluating the performance of an international manager, Abdallah (1984) finds that budgeted compared to actual profit is the most common primary financial measure used by the MNCs, followed by ROI and profit. Most MNCs use the same evaluation criteria for both domestic and international operations. Abdallah urges development of a management accounting framework for performance evaluation because

Multinational enterprises may have relatively little influence and no direct control over their environmental factors. Therefore, an MNE [multinational enterprise] needs a separate set of measurements for planning, control and evaluation of its internal performance, one which is substantially different from the set utilized by domestic enterprises. (p. 2)

Abdallah (1986) also warns MNCs to separate segment evaluation from the segment manager's evaluation. Internationally, many political and economic situations are beyond the control of the manager, yet directly affect the operations and profitability of the segment. In practice, this caution is not heeded, with "MNCs tend[ing] to use the same measures to assess the performance of the subsidiary managers" (Mueller et al. 1990, p. 117).

Schoenfeld (1981) calls for the inclusion of qualitative measures when measuring performance in order to address actions taken due to international influences. However, these measures are difficult to operationalize. In interviews with managers from 20 MNCs of which six were US-based, Schoenfeld (1986) finds little differences in the evaluation measures used across industries and across countries. Criteria include a combination of financial and managerial accounting data, financial ratios, and non-accounting indicators, such as project progress and data collected either through management auditing techniques or through operations. The criterion deemed most useful is the actual versus budget comparison "because budgets represent realistic,

mutually agreed outcomes which are based on a set of environmental conditions" (p. 245). Subsidiary performance is also evaluated apart from the manager's performance. All 20 MNCs interviewed used an arm's-length transfer pricing method.

In summarizing many of these studies, Holzer (1986) finds that multiple financial and non-financial criteria are used in the evaluation process. He concludes that domestic performance evaluation systems are frequently modified to consider the different environment and operating conditions of overseas units" (p. 9).

In this study, a survey of US-based multinational and domestic companies provides the performance evaluation and transfer pricing information necessary to address the current status of domestic and international evaluation processes. This study includes both inter-firm and intra-firm analyses for companies that transfer goods both internationally and domestically. The following hypotheses compare the international and domestic criteria used to evaluate managerial performance, and the influence of the transfer pricing method on these measures:

H_1 : MNCs evaluate domestic and international managerial performance using the same criteria.

H_2 : The transfer pricing method chosen does not affect the performance evaluation criteria used for (a) domestic and (b) international managers.

Sample Selection

The final sample consists of 247 companies that transfer goods domestically and/or internationally. For inclusion in the original sample, 753 corporations met the following criteria:

- (1) The corporation is listed on either the *Fortune* 500 or the *Business Week* 1000.
- (2) The corporation transferred goods to either domestic or international segments using some transfer pricing method or methods.
- (3) The corporation was in a manufacturing industry identified in prior studies as likely to use transfer pricing.

Of the 380 surveys returned (50.1 percent response rate), 96 did not transfer goods internally, 168 transferred goods domestically, 79 transferred goods internationally and 37 cited a company policy of non-participation in surveys. There were no significant differences in size or industry between respondents and non-respondents, or between early and late respondents.

The first analysis uses the full sample of 247 companies. A second analysis uses the 39 companies that returned both the domestic and international surveys. This allows for a matched-paired comparison of the 39 MNCs, contrasting domestic and international transfer pricing methods, objectives, and performance evaluation within each MNC.

The evaluation criteria are drawn from prior studies on transfer pricing and performance evaluation, and are presented in Table 2. These criteria are both

Table 2. Criteria defining performance evaluation measures and results for hypothesis 1

| Name | Description ^a | χ^2 prob. | N=247 | | N=39 matched pairs | | |
|--|---------------------------------------|-------------------|-----------------------------|--------------------------|--------------------------------|----------------------------|--------------------------|
| | | | n=168 Means, domestic | n=79 Means, int'l. | Paired Wilcoxon prob>ISI | n=39 Means, domestic | n=39 Means, int'l. |
| PERF1 | Company performance standards | .008** | 3.713 | 3.405 | .0236* | 3.923 | 3.333 |
| PERF2 | Net income of the segment | .012* | 4.458 | 4.051 | .0156* | 4.795 | 4.128 |
| PERF3 | Residual income | .343 | 2.685 | 2.772 | .0001** | 2.538 | 2.795 |
| PERF4 | Return on investment (ROI) | .146 | 3.768 | 3.506 | .1881 | 4.077 | 3.718 |
| PERF5 | Return on assets (ROA) | .155 | 3.911 | 3.595 | .2190 | 4.128 | 3.821 |
| PERF6 | Market share | .509 | 3.577 | 3.608 | .3708 | 4.026 | 4.077 |
| PERF7 | Cost reduction | .027* | 3.958 | 3.823 | .8032 | 4.590 | 4.487 |
| PERF8 | Profit margin | .076* | 4.077 | 3.937 | .1091 | 4.744 | 4.179 |
| PERF9 | Sales growth | .957 | 3.875 | 3.899 | .3177 | 4.538 | 4.333 |
| PERF10 | Adherence to budgets | .650 | 3.631 | 3.835 | .3722 | 3.974 | 4.026 |
| PERF11 | Meeting segment goals | .049* | 4.208 | 4.013 | .0534* | 4.744 | 4.231 |
| PERF12 | Product innovation | .001** | 3.625 | 3.000 | .0038** | 4.128 | 3.154 |
| PERF13 | Technical innovation | .001** | 3.542 | 2.937 | .0094** | 3.974 | 3.103 |
| Summary dimensions from the factor analysis of individual measures | | | | | | | |
| EVAL1 | General measures PERF1,6,7,9,10,11 | .400 | 3.881 | 3.785 | .0164* | 4.299 | 4.081 |
| EVAL2 | Profit measures PERF3,4,5,8 | .488 | 3.476 | 3.278 | .1836 | 3.872 | 3.462 |
| EVAL3 | Subsidiary income PERF2 | .012* | 4.458 | 4.051 | .0156* | 4.795 | 4.128 |
| EVAL4 | Innovation measures PERF12,13 | .000** | 3.690 | 3.025 | .0023** | 4.051 | 3.129 |

*Significant at $\alpha=.10$.

**Significant at $\alpha=.01$.

^aMeasured on a scale from 1 = very unimportant, to 5 = very important.

quantitative (e.g., ROI) and qualitative (e.g., innovation in products/technology) in nature. The perceived importance by respondents of these 13 criteria are measured on a five-point scale where 1 = very unimportant and 5 = very important.

These individual measures are also factor-analyzed to yield four dimensions of performance evaluation based on general measures, profit ratios, subsidiary income, and innovation.

Empirical Results

Two analyses are undertaken, one using the full sample of 247 corporations, the other using a matched-pairs subsample of 39 MNCs. Since the criteria are measured on an ordinal scale, responses are evaluated using the Pearson χ^2 statistic and the Wilcoxon matched-pairs signed-rank test.

The matched-pairs analysis uses the 39 MNCs that returned both domestic and international surveys. The Wilcoxon matched-pairs signed-rank test is appropriate for this intra-company analysis where responses on the domestic and international survey for each company are matched. Each MNC provided two responses per variable,

reflecting the nature of the transfer (domestic or international). Responses are paired by nature of the transfer, and the differences between each pair for each of the 39 MNCs are analyzed.

Full Sample: H₁

The first hypothesis is that domestic and international managerial performances are evaluated using the same measures. This hypothesis is rejected for many of the measures presented in Table 2.

While many of the same criteria are used for both domestic and international evaluations, they differ significantly in their importance to the evaluation process. Company performance standards (PERF1), segment income (PERF2), cost reduction (PERF7), profit margin (PERF8), meeting segment goals (PERF11), and innovation measures (PERF12 and PERF13) are significantly more important to domestic rather than international evaluations. Another five, for a total of nine of the 13, criteria are considered more important for domestic evaluations.

These findings may signal that domestic evaluations are more stringent and rigorous than international evaluations. Given the more unstable and volatile international operating environment, it may be better to use multiple criteria at a less strict level to compensate for the uncertainty in international subsidiaries. Domestic managers, operating in a more stable environment, are more easily held accountable for the performance of themselves and their subsidiaries, and therefore have the same standards applied at stricter levels.

The most important measures are segment income (PERF2), meeting segment goals (PERF11), and profit margin (PERF8), whether the transfers were domestic or international. These measures are significantly more important, however, to the domestic process. The remaining measures differ in importance depending on the nature of the transfer. In both domestic and international areas, residual income (PERF3) is the least important performance measure. Adherence to budgets (PERF10), while not significant, is more important for international evaluations. ROI (PERF4), while not significantly different between domestic and international evaluations, is less important as an international measure. These findings do not support the results of prior research regarding ROI and budgets as primary evaluation measures.

An examination of the four dimensions of performance evaluation yielded by factor analysis further explain these findings. All managerial evaluations rely primarily on subsidiary income (EVAL3) and general measures (EVAL1). However, all four dimensions are more important for domestic rather than international evaluations, with subsidiary income (EVAL3) and innovation measures (EVAL4) significantly more important. This finding supports the earlier interpretation of domestic standards as more rigorously applied than international standards.

Matched Pairs Sample: H₁

The first hypothesis can also be rejected for the matched-pairs sample of 39 MNCs that transfer goods both domestically and internationally.

Five measures are significantly more important in measuring domestic rather than international performances in companies with both types of managers: company performance standards (PERF1), segment income (PERF2), meeting segment goals (PERF11), product innovation (PERF12), and technical innovation (PERF13). Residual income (PERF3) is the least important measure in both domestic and international evaluations. As in the full sample analysis, ROI (PERF4) is not significant in either evaluation process.

The ranking in importance of primary criteria differs in the matched-pairs sample, whereas there were no differences in the full sample previously discussed. Segment income (PERF2), profit margin (PERF8), and meeting segment goals (PERF11) are the most important domestic criteria compared to the cost reduction (PERF7), sales growth (PERF9), and meeting segment goals (PERF11) for international evaluations. Since domestic managers have more responsibility for their subsidiaries' performance in a more stable environment, they are evaluated primarily on income and profit measures. International managers cannot control currency fluctuations and economic and political factors, and therefore cannot control income and profit to the same degree as their domestic counterparts. Cost reduction and sales growth are logical primary standards against which to measure international performance. MNCs with both types of managers seem to recognize the differences in operating environments. This was not true in the full sample, however.

As with the findings from the full sample, MNCs with both domestic and international managers consider the four summary factors as more important for their domestic, rather than international evaluations.

The results from the full and matched pairs samples do not support most prior findings that domestic and international managers are evaluated using the same measures, and that ROI is the primary measure. While some of the same measures are used in both evaluations, their importance varies with the process. ROI, while a possible factor in domestic evaluations, is overshadowed by other significantly more important measures. Importance depends on whether the managers evaluated are domestic or international.

The performance evaluation criteria are also not related to the goals set by the MNC for their subsidiaries, whether domestic or international. There is no discernible relationship between an MNC's goals for its subsidiaries and the performance evaluation criteria.

Full Sample: H₂

The second hypothesis of no relationship between transfer pricing methods and performance evaluation criteria can be partially rejected for domestic, but not for international, transfers, given the findings in Table 3.

Within the 168 domestic companies, there are significant differences in the relative importance of five criteria. Cost-based companies consider sales growth (PERF9) as significantly more important and residual income (PERF3) significantly less important than the other groups. Market-based companies find ROA (PERF5) and technical innovation (PERF13) significantly more important than other companies. Negotiated firms consider meeting segment goals (PERF11) as significantly less important than

Table 3. Results for hypothesis 2: by transfer pricing method (market price, negotiated price, cost-based price)

| Full sample of 247 companies | | N=168 domestic | | | N=79 international | | | | |
|--|---------------------------------------|-------------------|--------------------------|---------------------------|------------------------|------------------|--------------------------|---------------------------|------------------------|
| | | χ^2 prob. | n=55 Means, market | n=38 Means, negot'd | n=75 Means, cost | χ^2 prob | n=26 Means, market | n=12 Means, negot'd | n=41 Means, cost |
| PERF1 | Company performance standards | .676 | 3.673 | 3.632 | 3.773 | .661 | 3.192 | 3.583 | 3.488 |
| PERF2 | Net income of the segment | .156 | 4.418 | 4.474 | 4.480 | .137 | 3.692 | 3.667 | 4.390 |
| PERF3 | Residual income | .008** | 2.691 | 2.711 | 2.627 | .864 | 2.808 | 3.083 | 2.659 |
| PERF4 | Return on investment (ROI) | .287 | 3.873 | 3.684 | 3.733 | .410 | 3.269 | 3.500 | 3.659 |
| PERF5 | Return on assets (ROA) | .041* | 4.200 | 3.737 | 3.813 | .191 | 3.615 | 3.833 | 3.512 |
| PERF6 | Market share | .245 | 3.582 | 3.289 | 3.707 | .877 | 3.654 | 3.417 | 3.634 |
| PERF7 | Cost reduction | .251 | 4.018 | 3.895 | 3.973 | .326 | 3.962 | 3.583 | 3.805 |
| PERF8 | Profit margin | .637 | 4.073 | 3.921 | 4.160 | .665 | 3.923 | 3.750 | 4.000 |
| PERF9 | Sales growth | .012* | 3.800 | 3.500 | 4.107 | .137 | 4.038 | 3.917 | 3.805 |
| PERF10 | Adherence to budgets | .409 | 3.673 | 3.368 | 3.733 | .666 | 3.885 | 3.833 | 3.805 |
| PERF11 | Meeting segment goals | .062* | 4.273 | 4.053 | 4.240 | .983 | 4.000 | 4.167 | 3.976 |
| PERF12 | Product innovation | .951 | 3.745 | 3.605 | 3.560 | .810 | 2.962 | 3.417 | 2.902 |
| PERF13 | Technical innovation | .059* | 3.782 | 3.579 | 3.347 | .307 | 2.962 | 3.250 | 2.829 |
| Summary dimensions from the factor analysis of individual measures | | | | | | | | | |
| EVAL1 | General measures PERF1,6,7,9,10,11 | .013* | 3.872 | 3.710 | 3.973 | .615 | 3.846 | 3.667 | 3.780 |
| EVAL2 | Profit measures PERF3,4,5,8 | .199 | 3.618 | 3.368 | 3.427 | .510 | 3.192 | 3.500 | 3.268 |
| EVAL3 | Subsidiary income PERF2 | .156 | 4.418 | 4.474 | 4.480 | .137 | 3.692 | 3.667 | 4.390 |
| EVAL4 | Innovation measures PERF12,13 | .418 | 3.855 | 3.711 | 3.560 | .542 | 3.038 | 3.417 | 2.902 |

*Significant at $\alpha=.10$.**Significant at $\alpha=.01$.^aMeasured on a scale from 1 = very unimportant, to 5 = very important.

market- and cost-based firms; however, it is still the second most important criterion for negotiated firms, after segment net income (PERF2). The most important measure for market-and cost-based companies is meeting segment goals (PERF11). As in prior analyses, budget and ROI are not important criteria.

An overall analysis shows that segment measures, whether income or goals, are two of the three most important criteria used by all domestic companies, regardless of transfer pricing method. While individual measures vary in importance due to the transfer pricing method chosen, summary measures are less dependent on method.

For the 79 MNCs transferring goods internationally, the hypothesis cannot be rejected. No measures are significantly different among the groups. Sales growth (PERF9) is the most important criterion for the market based MNCs, while negotiation MNCs stress meeting segment goals (PERF11). Segment income (PERF2) is the most important evaluation criterion for cost-based MNCs, and profit measures (EVAL2) are more important to negotiation firms than to others. These findings do

not support Yunker's (1983) proposition that less emphasis is placed on profit related criteria by negotiated and cost-based firms. In all cases, ROI is not an important criterion in evaluating performance.

In international evaluations, these findings indicate that MNCs are aware of and concerned with the effects of the operating environment on subsidiary performance, rather than the effects of a particular transfer pricing method.

In summary, for domestic managers, the transfer pricing method influences the relative importance of individual performance evaluation criteria used by the company. For international managers, however, the transfer pricing method chosen does not affect the evaluation criteria.

Conclusions

Contrary to prior findings, performance evaluation measures are applied in different degrees to domestic and international managers. ROI is not the primary measure for either manager type, but is more important in domestic manager evaluations. Perhaps the warnings in prior performance evaluation research regarding ROI have been heeded by upper management. Adherence to budgets, while advocated in theory, is not a primary criterion in performance evaluation, either domestically or internationally.

The findings of the current study indicate that evaluation processes do differ for domestic and international managers, both in the relative importance assigned to each criterion, and in the absolute importance of secondary criteria. MNCs apply performance standards more rigorously in domestic evaluations, perhaps because the domestic operating environment is more stable and the managers have more control over subsidiary profit than their international counterparts.

Evaluation measures are also affected by the type of transfer pricing method used domestically. Cost-based companies rely more on general measures than do negotiation and market-based companies. Internationally, however, the transfer pricing method used is not related to the performance measures preferred by the MNCs.

The different content of accounting data may explain some of the differences in rigor of applying performance measures in international environments. The tenor of an MNC's management will cause it to seek more aggressive or conservative accounting techniques, in areas such as inventory evaluation, depreciation, and cost bases, will affect the numbers used in quantitative performance measures, and will thus differ among MNCs with different management philosophies. More research is indicated in this area.

Notes

1. Performance evaluation has long been recognized as a primary objective of transfer pricing by most authors, including Bierman (1959), Shillinglaw (1961), Mautz (1968), Kaplan (1982), Eccles (1985), Knowles and Mathur (1985) and Borkowski (1990).
2. Some deficiencies of ROI as an evaluation measure include the MNC's use of ROI as the sole or principal measure, investments made to increase ROI at the expense of economic wealth, and bypassing

investments with an ROI greater than the MNC's cost of capital because it is lower than the segment's current ROI (Reece and Cool, 1978).

3. See Abdel-khalik and Lusk (1974) and Borkowski (1990) for a discussion of transfer pricing theory and recent studies.

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The Information Content of Value Added, Earnings, and Cash Flow: US Evidence

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Key words: Value added; Earnings; Cash flow; Information content

Abstract: *Various calls have been made for the disclosure of value added data in US annual reports. This study examines the relative and incremental content of value added, earnings and cash flow in the US context. The results show a clear dominance of value added information over both earnings and cash flow information.*

The information content of earnings components and non-earnings disclosures beyond earnings has been examined extensively in the accounting and finance literature.¹ Because earnings have a central role in financial reporting, contracting, and valuation models, any challenge to this role is subjected to incremental and relative information content tests. One serious challenge examined in the literature concerns the role of cash flows versus earnings information, especially since FASB 95 (effective July 1988) required the disclosure of cash flow statements with separate operating, investing, and financing components. Another challenge, still not fully examined, concerns the role of value added data when included in financial reports as suggested by the 1989–90 American Accounting Association Committee on Accounting and Auditing Measurement (1991) and most of the international accounting research literature (Meek and Gray, 1988; Choi and Mueller, 1992).

These suggestions for additional disclosures in US annual reports of value added data in addition to both earnings and cash flow data raise the fundamental question of the incremental and relative information content of each of the three measures of accounting return: earnings, cash flows, and value added.

Value Added Versus Earnings and Cash Flows

Value added represents the total return of the firm earned by all providers of capital, plus employees and the government.² It can be computed by the following rearrangement of the income statement:

$$S - B = W + I + DP + DD + T + R \quad (1)$$

$$S - B - DP = W + I + DD + T + R \quad (2)$$

where R = retained earnings, S = sales revenue, B = purchases of material and services, W = wages, I = interest, DD = dividends, T = taxes and DP = depreciation.

Equation (1) expresses the gross value added; Eq. (2) expresses the net value added. In both equations, the left side (the subtractive side) shows the value added (gross or net), and the right side the additive side) shows the disposal value among the stake holders.

The question is to know the incremental and relative role value added could play in the context of US financial reporting. Presently, the disclosure spectrum covers both earnings and cash flow data. The return/earnings research shows a limited usefulness of earnings (Lev, 1989). Studies which examined the informational contribution of earnings-related data, including cash flow data, show, however, an increase in R^2 (Bublitz et al., 1985, Lipe, 1986; Hoskin et al., 1986) Value added data represent earnings-related data. The examination of incremental and relative information content of value added data in the US context could help asses whether this new information is useful, at the margin, in explaining the behavior of share prices.

Estimation Model

A generally accepted return valuation model used is as follows:

$$(\Delta P_{jt} + D_{jt})/P_{jt} = a_0 + a_1[\Delta AR_{jt}/AR_{jt}] + e_{jt} \quad (3)$$

where P = market price of the security, D = dividend, and AR = accounting return (earnings, value added or cash flow based).

The model depicted in Eq. (3) implies a linear relation between the relative changes in security prices and the relative change accounting return (as measured by either the relative change in earnings, value added, or cash flows). The model may be described by either one of the following three equations:

$$RCMR^{jt} = a^0 + a^1 RCE^{jt} + e^{jt} \quad (3a)$$

$$RCMR^{jt} = a^0 + a^1 RNVA^{jt} + e^{jt} \quad (3b)$$

$$RCMR^{jt} = a^0 + a^1 RCF^{jt} + e^{jt} \quad (3c)$$

where $RCMR$ = changes in security price return, RCE = changes in earnings, $RNVA$ = changes in net value added, and RCF = changes in cash flow.

The models depicted in Eqs. (3a), (3b), and (3c) limit the impact of the relative changes in accounting returns on the changes in security prices to the present year and do not include the impact of at least the potential impact of the earlier years. A one-lag model that would include the impact of the preceding year would be as follows:

$$(\Delta P + D_{jt})/P_{jt-1} = a_0 + a_1 [\Delta AR_{jt}/AR_{jt-1}] + a_2 [\Delta AR_{jt-1}/AR_{jt-2}] + e_{jt} \quad (4)$$

Equation (4) depicting the one-lag valuation model will be used as the estimation model in this study for the determination of the relative information content of each of the three accounting return measures considered in this study: earnings, value added, and cash flow. The model may be expressed by one of the following three equations:

$$RCMV^t = a^0 + a^1 RCE^t + a^2 RCE^{t-1} + e^{jt} \quad (4a)$$

$$RCMV^t = a^0 + a^1 RNVA^t + a^2 RNVA^{t-2} + e^{jt} \quad (4b)$$

$$RCMV^t = a^0 + a^1 RCF^t + a^2 RCF^{t-1} + e^{jt} \quad (4c)$$

When examining the information content of two measures of accounting return, ARI and AR2, the following equation will be used:

$$\begin{aligned} (\Delta P_{jt} + D_{jt})/P_{jt-1} = a_0 + a_1 [\Delta AR_{1, jt}/AR_{1, jt-1}] + a_2 [\Delta AR_{1, jt-1}/AR_{1, jt-1}] \\ + a_3 [\Delta AR_{2, jt}/AR_{2, jt-1}] + a_4 [\Delta AR_{2, jt-1}/AR_{2, jt-2}] + e_{jt} \end{aligned} \quad (5)$$

This equation may be described by any one of the following three equations:

$$RCMV^t = a^0 + a^1 RCE^t + a^2 RCE^{t-1} + a^3 RNVA^t + a^4 RNVA^{t-1} + e^{jt} \quad (5a)$$

$$RCMV^t = a^0 + a^1 RCE^t + a^2 RCE^{t-1} + a^3 RCFE^t + a^4 RCFE^{t-1} + e^{jt} \quad (5b)$$

$$RCMV^t = a^0 + a^1 RNVA^t + a^2 RNVA^{t-1} + a^3 RCF^t + a^4 RCFE^{t-1} + e^{jt} \quad (5c)$$

Data and Sample Selection

The accounting return variables used were based on value added, earnings or cash flow measures. More explicitly, these measures are defined from COMPUSTAT datas items as follows:³

- (1) Net value added (NVA) = the sum of labor expenses, corporate taxes, dividends, interest expense, minority shareholders in subsidiaries, and retained earnings.
- (2) Earnings (E) = income available to common equity.
- (3) Cash flow (CF) = cash flows generated from continuing operations, where cash flows are defined as income available to common plus depreciation, deferred taxes, and the changes in the non-cash working capital.

The firms examined in this study represent all the NYSE and AMEX firms that have available NVA, E, CF, and P data over the period 1981–1987 in COMPUSTAT.⁴ The selection procedure resulted in a sample of 4 325 firm year observations.

Results

Tables 1 and 2 present respectively the results of the regression on simple and combined return effects. The six equations are significant at $p = 0.05$. Each of the measures of accounting return, value added, income, or cash flows is significant in explaining the changes in security returns. The tests for relative and incremental information content are shown respectively in Tables 3 and 4.

Table 1. Regression results on single return effects

Model 1: Earnings based

| | Intercept | RCE _t | RCE _{t-1} | F | R ² |
|-------------------------|------------------|------------------|--------------------|---------|----------------|
| Coefficient <i>t</i> | 0.1111 14.15* | 0.0015 2.334* | 0.0022 1.460*** | 3.450** | 0.0019 |

Model 2: Net value added based

| | Intercept | RNVA _t | RNVA _{t-1} | F | R ² |
|--|------------------|-------------------|---------------------|--------|----------------|
| | 0.1064 15.89* | 0.024 3.551* | -0.002 -1.968** | 8.374* | 0.0049 |

Model 3: Cash flow based

| | RCF _t | RCE _{t-1} | F | R ² | |
|-------------------------|------------------|--------------------|-------------------|----------------|--------|
| Coefficient <i>t</i> | 0.110 13.99** | 0.004 2.456* | -0.0004 -0.434 | 3.106** | 0.0017 |

RCE=Relative change in earnings; RNVA= relative change in net value added;
RCF=relative change in cash flows.

significant at * α = 0.01; ** α = 0.05; *** α = 0.10.

Table 2. Regression results on combined return effects

Model 4: Earnings and net value added based

| | Intercept | RCE _t | RCE _{t-1} | RNVA _{t-1} | F | R ² |
|-------------------------|---------------|------------------|--------------------|---------------------|------------------|------------------|
| Coefficient <i>t</i> | 0.11 15.99 | 0.001 2.888* | 0.004 1.84** | 0.024 3.527 | -0.008 -0.989 | 6.777* 0.0025 |

Model 5: Earnings and cash flow based

| | Intercept | RCE _t | RCE _{t-1} | RNVA _t | RNVA _{t-1} | F | R ₂ |
|--|----------------|------------------|--------------------|-------------------|---------------------|---|----------------|
| | 0.11 14.22* | 0.0016 0.45* | 0.0051 2.106** | -0.002 2.56* | 4.26* -1.816** | | 0.0047 |

Model 6: Value added and cash flow based

| | Intercept | RNVA _t | RNVA _{t-1} | RCF _t | RCF _{t-1} | F | R ₂ |
|-------------------------|-----------------|-------------------|---------------------|-------------------|--------------------|------------------|------------------|
| Coefficient <i>t</i> | 0.108 16.01* | 0.023 3.46* | | -0.0003 -2.47* | 0.0034 2.56* | -0.0009 -0.53 | 5.593* 0.0067 |

significant at * α = 0.01; ** α ; *** α = 0.10.

Table 3. Tests for relative information concept for net income, cash flows and value added

| Ranking | Value added | > | Net income | > | Cash flows |
|-----------------|-------------|-----|------------|-----|------------|
| Adjusted R^2 | 0.0049 | > | 0.0019 | > | 0.0017 |
| <i>p</i> -value | | .01 | | .03 | |

Table 4. Incremental comparisons

| | |
|---|--|
| 1. Information content (value added /income) | = information content (value added, income) information content (income) = $0.0025 - 0.0019 = 0.006$ |
| 2. Information content (value added/cash flows) | = information content (value added, cash flows) information content (cash flows) = $0.0067 - 0.0017 = 0.005$ |
| 3. Information content (cash flows/value added) | = information content (cash flows, income) information content (income) = $0.0067 - 0.0049 = 0.0024$ |
| 4. Information content (cash flows/ income) | = information content (cash flows, income) information content (income) = $0.0067 - 0.0019 = 0.0048$ |
| 5. Information content (cash flows/income) | = information content (cash flows, income) information content (income) = $0.0067 - 0.0019 = 0.0048$ |
| 6. Information content (income/cash flow) | = information content (income, cash flow) information content (cash flows) = $0.0067 - 0.0017 = 0.0050$ |

Table 3 presents the levels of significance for the relative information content comparisons. For the pooled sample and the period examined, value added exhibits greater relative information content than net income and cash flows ($p < .01$), and net income exhibits greater relative information content than cash flows ($p < .03$).

Table 4 presents the results for tests of incremental information content. It also shows the information content of value added to be dominating, exhibiting incremental information content beyond both net income and cash flows. Similarly, net income dominates cash flows.

Summary and Discussion

The study examined both the relative and incremental information content of value added, net income, and cash flows in the US context. The findings show the value added concept to dominate both earnings and cash flows in terms of both incremental information content.

The results show that value added information can supply some of explanatory power of security return beyond that provided by earnings or cash flow measures. It argues for the disclosure of the underlying data needed to compute value added

variables. The cost of reporting this type of data is relatively immaterial given the availability of the data for the payroll purposes and reporting to governmental agencies. It may constitute a definite improvement over the present US reporting system and contribute to the international harmonization of accounting standards. It is also in line with the recommendations of the American Accounting Association Committee on Accounting and Auditing Measurement (1991).

Notes

1. Examples of non-earnings variables examined include deferred taxes (Beaver and Dukes, 1972) price-level adjusted data (Beaver et al., 1982; Beaver and Landsman, 1983; Bublitz et al., 1985; Bernard and Ruland, 1987), oil and gas disclosures (Beaver, et al., 1980), prior stock returns (Beaver, Lambert, and Morse, 1980; Beaver, Lambert, and Ryan 1987), LIFO tax savings and liquidations (Biddle and Lindhal, 1982; Stober 1986), cash and funds flows (Harmon, 1984; Schaefer and Kennelley, 1986; Bowen, et al., 1987; Livnat and Zarowin, 1990; Lang and McNichols, 1990), accruals and earnings components (Lipe, 1986; Rayburn, 1986; Wilson, 1986, 1987; Bernard and Stober, 1989; Lee, et al., 1990), and balance sheet and 10-K data (Foster and Vickrey, 1978; Foster et al., Vickery 1983; Hoskin, et al., 1986; Hopwood and Schaefer, 1988).
2. Studies examining the usefulness of value added include Cox (1978), Gray and Maunders (1980), Karpik and Belkaoui (1989), Maunders (1985), McLeary (1983), Meek and Gray (1988), Morley (1978, 1979), Renshall et al (1979), Rutherford (1972), Sinha (1983), Suojanen, (1954), and Riahi-Belkaoui (1992).
3. Each variable is defined using COMPUSTAT's annual industrial data definitions as follows:

$$NVA = (42_t + 6_t + 19_t + 21_t + 15_t + 49_t + 36_t - 36_{t-1})$$

$$E = 20_t$$

$$CF = (20 + 14 + 50)_t - (4 - 1 - 5)_{t-1}$$

4. The period 1987–1981 was used because it allowed us to generate a significantly higher number of firm year observations than other periods.

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Accounting Standard Setting in the United States: Are Public Accountants Serving on the FASB Influenced by their Former Firms?

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Key words: FASB; Independence; Statements of financial accounting standards; Voting behavior

Abstract: *This study examines whether public accountants serving on the Financial Accounting Standards Board (FASB), in their voting behavior, act as agents of their former firms. A statistical analysis involving a likelihood ratio found no influence by the firm on the Board member. The negative results of this study contrast with the allegations of a lack of independence by the members of the Accounting Principles Board (APB). Unlike the APB, however, members of the FASB are required to sever all formal ties with their former employers as a condition for appointment to the Board. Furthermore, the FASB promulgates accounting standards in a spirit of due process and openness. For example, the general public is admitted to all of its meetings. The conclusion is drawn that the condition to sever employment, in conjunction with the open process by which the accounting standards are developed, has achieved its objective of independence, at least for the public accountants sitting on the Board. If other countries also desire independence in their accounting standard-setting arenas, they might consider adopting a similar structure and process as the FASB.*

In a study of accounting standard setting in several countries, Bloom and Naciri (1989) found a system of openness to be prevalent in the United States, versus the closed promulgation process that exists in Australia, Canada, Japan, New Zealand, Sweden, Switzerland, and West Germany. The Financial Accounting Standards Board (FASB) has been the principal accounting standard-setting body in the US since 1973, and Bloom and Naciri assert (p. 72) that the FASB “operates entirely in the sunshine”. A primary objective of such a process is the enhancement of independence. Indeed, as Miller and Redding (1988, p. 31) emphasize, the FASB “must

independent of any particular constituent group in order to be relieved from pressure to provide standards that promote the interest of that group".

Given this background, the objective of this research was to determine if certain members of the FASB, former public accountants, were in fact independent from a specific constituency, their former accounting firms. The results should be of interest to parties interested in the process by which accounting standards are promulgated, both within and outside the US, especially since the structure of the FASB and the manner in which the deliberation process functions are rather distinct as opposed to counterpart bodies in other countries. The specific sections of the paper are presented in the following order: a historical perspective of accounting standard setting in the US, our motivation to undertake the research, a review of related research, the research design, and our conclusions.

Historical Perspective

A legion of reasons have been offered to explain the demise of the Accounting Principles Board (APB), not the least of which was an alleged lack of independence on the part of Board members in the standard-setting process. Often it was alleged that these Board members acted in accordance with the direction of their parent organizations, the vast majority of which were audit firms. The audit firms, in turn, were said to formulate their positions as a function of the desires of certain important clients. Some examples of charges of such behavior on the part of the Board are found in Davidson and Anderson (1987, p. 122), Miller and Redding (1988), Hendriksen (1982), and Zeff (1984, p. 465).

A most telling instance of a client-firm-Board member interaction is provided by Zeff (1971) in the case of Accounting Principles Board Opinion No. 11 (APB 11). The exposure draft of the promulgation addressed interperiod income tax allocation and the accounting treatment of the investment credit.¹ Although the unpopular investment tax credit portion was deleted, the vote on the final Opinion barely achieved the two-thirds requirement needed for passage; the final vote being 14 assents and six dissents. Of the six dissents, one was filed by the Price Waterhouse & Co. partner on the APB (Price Waterhouse had opposed the "comprehensive" form of tax allocation contained in the Opinion). Three of the other five dissents were provided by the three industry representatives on the Board, who all happened to be clients of Price Waterhouse.

Apparently, client pressures on the members of the APB were both frequent and efficacious. Arthur Wyatt, a former member of the FASB, stated that by 1972 there was wide concern that the APB were being unduly influenced by certain clients and that their subjugation was probably a key impetus in the creation of the FASB (Wyatt, 1989, p. 99). Indeed, a special committee of the American Accounting Association (AAA), charged with making recommendations involving the possible establishment of an accounting commission to establish accounting principles, cited lack of independence as one of the several areas of dissatisfaction often mentioned by Board critics² (Zeff, 1971, p. 226):

Members of the board who continue as members of their firms, cannot, it is said, be truly independent, since their views are likely to be colored by the interests of important clients in relation to matters brought before the board.

Due to such criticisms and pressures, in 1973 the FASB replaced the APB as the primary source of accounting principles in the private sector. The FASB, however, has not been devoid of critics. Even though the seven members of the FASB are required to sever employment with their firms, they have still been accused at times of yielding to lobbying pressures. For example, a particularly polemic report released by the late Senator Lee Metcalf (D-Montana), entitled *The Accounting Establishment*, alleged, among other things, that the then Big Eight firms controlled the setting of accounting standards used by their corporate clients (Metcalf, 1976, p. 7). As a result, Metcalf proposed that the Federal government be responsible for the establishment of financial accounting standards. Another form of criticism stems from the Business Roundtable, a powerful business lobbying group, which, in meetings with managing partners of major accounting firms and the Securities and Exchange Commission (SEC), complained that some of the FASB's standards "are not effective and too costly to implement" (Berton and Ricks, 1988, p. 2). Consequently, the organization proposed an overhaul of the FASB and its rule-making process. One suggestion involved a field test of an FASB standard prior to its adoption.

As to the actual effects of these and other lobbying activities on the FASB, Wyatt (1989, p. 98) cites the following Statements on Financial Accounting Standards (SFASs), and their subsequent interpretations and amendments that "appear to have been influenced, possibly unduly influenced, by outside forces" (SFAS Nos. 13, 15, and 87). Wyatt does not reveal, however, the source of the lobbying efforts, or which Board member(s) were purportedly influenced by the campaign.

Furthermore, Wyatt (1988, p. 26) laments the fact that no professional group has ever actively encouraged the FASB to adopt an approach that would encourage fairness in financial reporting or best conform to the FASB's conceptual framework. Rather, he states that although most of the large public accounting firms usually respond to the proposed FASB statements, "the views expressed are divergent and too often appear to favor positions espoused by major clients". Wyatt does state, however, (1989, p. 98) that in his opinion the end-product (the standards) results more from the independent judgments of the Board member than from the influences on the FASB emanating from pressure groups and other lobbying activities.

Motivation for the Research

As mentioned previously, the openness of the FASB standard-setting process contrasts to the closed hearings that exist in the countries cited earlier. Furthermore, to our knowledge, the requirement to sever employment is also unique to the FASB. Both aspects are designed to promote independence; if it is found that certain members are, in fact, not acting independently, it cannot be asserted that the FASB's structure is achieving this objective.

If the allegation is correct that there is a chain of influence running from audit clients to their accounting firms and from the accounting firms to the FASB, then

both links of the chain must hold. For this paper we have decided to investigate the accounting firm-FASB link, not the client-accounting firm link.

How could an accounting firm influence the FASB? Any organization can lobby the FASB through letters and testimony in public hearings on Discussion Memoranda (DMs) concerning accounting issues and Exposure Drafts (EDs) of proposed SFASs. It is debatable, however, to what extent public testimony and comment letters sway the Board. (Comment letters are useful in revealing the positions taken by the firms doing the commenting, and we will use these letters in precisely this way.)

A more direct way that an accounting firm could influence the Board is by having a former partner as a Board member who would act in the interests of the firm, i.e. non-independently. Even though a Board member is required to sever ties with his former employer, he may be motivated to support the positions of his former firm for the following reasons:

- (1) He plans to rejoin the firm at some time after his term expires. Several members of the FASB have in fact done this.
- (2) There may be a certain loyalty to a former firm that influences a member's voting behavior.
- (3) There might be an honest sharing of a former firm's views because of a bonding or adoption of the corporate culture and values of the firm.

For the purposes of statistical testing, we formulate a null hypothesis and determine whether the evidence justifies us in rejecting it. Since the negation of the null hypothesis would be the assertion of non-independence, we formulate the null hypothesis as follows:

H_0 : FASB members who are public accountants act independently of their former accounting firms in their voting behavior.

Related Research

Haring (1979) studied various associations between the positions of the FASB, accounting firms, and other interest groups with which the Board interacts. Specifically, he investigated the relationship of accounting firm positions versus client preferences, and FASB rulings versus various interest group preferences. Haring concluded that client positions may not be a significant factor in the determination of the position of an audit firm on a proposed SFAS. He also found that, in general, the FASB did not appear to be responsive to business interests.

Other research involving voting behavior of the members of the APB and the FASB have primarily focused on alleged coalition voting by Board members. Some of the early studies investigating the APB include those of Meyer (1974) and Rockness and Nikolai (1977), while those involving the FASB include Hussein and Ketz (1980), Brown (1981), Patton (1981), Seltz and Grove (1982, 1983), and Moody and Flesher (1986). Newman (1981) studied voting behavior of both the APB and the FASB. These studies, for the most part, found no evidence of coalition voting by Board members associated with the Big Eight or other blocs within the APB or

FASB. None of these studies, however, has tested whether an agency relationship exists between individual Board members and their former employers.

Research Design

SFASs Nos. 26–71 were selected for examination. The primary motivation for selecting this set of SFASs was that: (1) the same three public accountants sat on the Board during the issuance of these statements and thus their behavior would presumably be consistent across these promulgations; and (2) the number of SFASs was large enough to ensure sufficient data points to undertake appropriate statistical analysis.

Due to the nature of the FASB's filing system,³ not all comment letters were provided us that originated from the three accounting firms on the final ED for each of the SFASs. As a result, no copies were received on the final EDs of SFASs nos. 27, 40, 41, 42, 47, and 53–71. As will be noted, however, the resulting letters do represent a sufficient number of observations for data analysis.

The comment letters obtained were classified into three distinct categories: (1) in favor of the proposed standard without any significant modifications; (2) in favor of the proposed standard with significant suggested modifications, and (3) opposed to the standard. For the most part, the letters were direct enough to fit clearly into each of these positions. However, as a check of the classification process, two independent reviews were conducted. Finally, since the FASB staff may have possibly overlooked some letters for the SFASs for which we requested letters, it was decided to treat the absence of a letter by an accounting firm as a "no response" by that organization. In this manner we measure only associations between recorded comment letters and Board votes.

Exhibit 1 lists the Board members, their former accounting firms, and the number of their votes on SFASs Nos. 26–52 that were included as observations. As Exhibit 1 indicates, there was a total of 58 data points, a number that we deemed adequate for analysis.

Table 1 presents a classification of the 58 observations; the results of the statistical analysis are presented below the table. The table is by definition a 3×2 contingency table (three parent positions versus two vote types). Although the most common method to test the independence of the column from the row categories in such a classification format is through the Pearson χ^2 statistic, the requirement of an expected frequency of at least five in each cell is violated. Accordingly, the statistic we employed is based on a comparison of likelihoods and is not subject to the above

Exhibit 1. FASB members studied (Statements 26–71)

| Individual | Former employer | Number of observations |
|--------------------------|-------------------|------------------------|
| Chairman, Donald J. Kirk | Price Waterhouse | 19 |
| John W. March | Arthur Andersen | 21 |
| Ralph E. Walters | Touche Ross & Co. | 18 |
| Total | | 58 |

The other members of the Board for Statements 26–71 were Frank E. Block, Robert A. Morgan, David Mosso, and Robert T. Sprouse. These individuals did not come to the Board from accounting firms.

Table 1. Voting classifications

| Comment letter by former employer | | | | |
|-----------------------------------|----------------------|-----------------------------|---------------------|-------|
| Vote by FASB member: | In favor of standard | In favor with modifications | Opposed to standard | Total |
| Assent: | | | | |
| Kirk | 4 | 10 | 2 | 16 |
| March | 3 | 13 | 2 | 18 |
| Walters | 0 | 12 | 2 | 14 |
| Total | 7 | 35 | 6 | 48 |
| Dissent: | | | | |
| Kirk | 0 | 2 | 1 | 3 |
| March | 0 | 3 | 0 | 3 |
| Walters | 1 | 3 | 0 | 4 |
| Total | 1 | 8 | 1 | 10 |
| Total | 8 | 43 | 7 | 58 |
| % of assents | 87.5 | 81.4 | 85.7 | |
| % of dissents | 12.5 | 18.6 | 14.3 | |

Log Likelihood ratio = 0.236648, 2 d.f. Non-significant at 0.10.

constraint. Although interested readers may refer to Winkler and Hayes (1975, p. 831) for a detailed explanation of the statistic, a brief explanation will be provided.

The statistic is calculated by doubling the difference in the natural logarithms of two likelihoods. The first is the likelihood of the observed data given that the probability of an assent vote depends on the position of the accounting firm; the second likelihood is that of the observed data given that an assent vote does not depend on the position of the firm. The statistic follows a χ^2 distribution with 2 degrees of freedom. The *p*-value of the score of 0.236648 is non-significant at a level of 0.10, which does not lead to a rejection of the null hypothesis that the vote of the Board member is independent of the position of the accounting firm. Accordingly, the analysis provides no evidence that the votes of these FASB members are influenced by the positions of their former firms.

At times, however, this type of statistical analysis lends itself to charges of "overkill," and perhaps an analysis of the fine details, the individual voting patterns within Table 1, and a supplementary narrative in Exhibit 2, will enhance the analysis. First, as mentioned previously, Table 1 provides a breakdown of the Board member's vote given his firm's position. Exhibit 2 indicates whether a correlation existed between the Board member's reason given for a dissent vote and a similar position in the firm's comment letter. Since the Board member is not required to provide his reason for an assent, no public rationale is available for analysis. Accordingly, the dissent votes provide the best clue as to whether the Board member is placing his *imprimatur* on the firm's position and trumpeting its message.

First, the overall pattern of the voting behavior depicted in Table 1 is of interest. Although there are relatively few data points in the first and third columns ("in favor of standard" and "opposed to standard") the percentages of assents is almost identical, 87.5 percent versus 85.7 percent. One would presume that if the accounting firm were strongly opposed to the standard, the Board member, if acting as an agent, would cast a dissent vote. This is clearly not the case, as evidenced by the fact that only one dissent vote was made in these seven occurrences. Furthermore, this ratio

Exhibit 2. Mapping between board member's dissent vote and audit firm's position**Kirk and Price Waterhouse***SFAS 34:*

PW: For, with modification
Kirk: Dissent

Capitilization of interest cost

No relationship between PW's objections and Kirk's reason for dissent

SFAS 43:

PW: For, with modification
Kirk: Dissent

Accounting for compensated absences

No relationship between PW's objections and Kirk's reason for dissent

SFAS 52:

PW: Against
Kirk: Dissent

Foreign currency translation

PW: Keep SFAS 8 and amend it. Defer translation adjustments related to non-current monetary assets and liabilities and translate inventories at the current rate

Kirk: Essentially retain SFAS 8's translation method, with an exception being translation of locally sourced inventory at the current rate

March and Arthur Andersen*SFAS 35:*

AA: For, with modification
March: Dissent

Accounting and reporting by defined benefit pension plans

No relationship between AA's objections and March's reason for dissent

SFAS 38:

AA: For, with modification
March: Dissent

Accounting for pre-acquisition contingencies of purchased enterprises

AA: These should be an adjustment of the purchase price under certain conditions and as adjustments to income under certain conditions
March: There should be an adjustment of the purchase price

SFAS 44:

AA: For, with modification
March: Dissent

Accounting for intangible assets of motor carriers

No relationship between AA's objections and March's reason for dissent

Walters and Touche Ross*SFAS 33:*

TR: For, with modification
Walters: Dissent

Financial reporting and changing prices

No relationship between TR's objection and Walters' reason for dissent

SFAS 35:

TR: For, with modification
Walters: Dissent

Accounting and reporting by defined benefit pension plans

No relationship between TR's objection and Walters' reason for dissent

SFAS 39:

TR: For, with modification
Walters: Dissent

Financial reporting and changing prices: specialized asset – money and oil and gas

No relationship between TR's position and Walters' reason for dissent

SFAS: 44:

TR: For
Walters: Dissent

Accounting for intangible assets of motor carriers

No relationship between TR's position and Walters' reason for dissent

does not change much when the firm is in favor of the standard but proposes modifications, the assent vote ratio being 81.4 percent.

Exhibit 2 presents the analysis of the mapping mentioned previously between the firm's comments and the Board member's recorded reason for the dissent. As indicated by the 10 observations, there is very little association between the firm's stated

Table 2. Voting agreement

| Parent/board member position | SFAS classification | | |
|---------------------------------|---------------------|--------|-------|
| | Disclosure | Income | Total |
| Agree | 11 | 29 | 40 |
| Disagree | 3 | 12 | 15 |
| Total | 14 | 41 | 55 |

$\chi^2 = 0.3233$, 2 d.f. non-significant at 0.10.

posture towards the ED and the Board member's listed reason for his dissent. This lack of a correlation between the two positions provides further evidence of independence on the part of these Board members.

Lastly, in a study of the APB pronouncements, Moonitz (1974, p. 23) argued that standards involving disclosure matters were less contentious than income effect promulgations. Since this would also be the expected case with FASB promulgations, we classified the data points as to income versus disclosure effect in an effort to determine if agreement between the firm and a Board Member varied as a function of this dichotomy. Table 2 depicts this classification for 55 data points.⁴ The computed χ^2 statistic does not even approach a significance level of 0.10, thus there is no evidence to support the proposition that the type of votes cast was influenced by the nature of the SFAS.

Conclusions

In summary, there is no evidence of a voting agency relationship existing between the FASB members observed in this study and their former firms. Given the earlier criticisms regarding the lack of independence of the APB, this study supports the proposition that the intended structure of the FASB is meeting its objectives. Accordingly, we concur with the observation made by Wyatt and cited earlier in this paper that the standards are more a product of independent judgments of Board members than a product of lobbying activities. Although such independence would presumably be welcomed behavior, evidently this is not always the case. Wyatt relates (1989, p. 98) that the lack of success in their lobbying efforts has frustrated some accounting practitioners to the extent that they suggested they would do better if accounting standards were set by a governmental agency rather than the FASB. Wyatt succinctly described their motivation as follows: "After all, they have experience in lobbying elected officials and those responsible to elected officials." However, if other countries also desire independence in their accounting standard-setting process, they might consider adopting a promulgation model similar to that of the FASB.

Notes

1. The exposure draft proposed spreading the benefits of the investment tax credit, as advocated in APB 2. Of the approximately 1000 comments letters received by the APB, most related to the investment credit and opposed the deferred approach (Zeff, 1971, p. 201)

2. Some of the other charges were: (1) a "firefighting" approach rather than an underlying philosophy as a basis for the establishment of accounting principles; (2) insufficient representation on the board by parties interested in accounting principles; (3) too many compromises between opposing points of view embedded in the final pronouncement to the detriment of coherence and logic; and (4) too restricted a role on the part of the Board, especially given its focus on external reporting issues.
3. The FASB files all comment letters on a specific ED together in the order in which they are received. Hence, the FASB staff had a difficult time in selecting letters from a small number of organizations across a large number of EDs.
4. SFAS 32, "Specialized Accounting and Reporting Principles and Practices in AICPA Statement of Position and Guides on Accounting and Auditing Matters," was classified as both income and disclosure and omitted from this analysis, thus reducing the observations by three votes.

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Acquisitions and Goodwill: The United Kingdom and the United States

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Key words: Acquisition; Financial characteristics; Goodwill; Target company; United Kingdom; United States

Abstract: Do international investors have an inherent advantage over US investors because of differences in the accounting practices for recording purchased goodwill? While other articles have discussed these advantages, few have tested them empirically. This study attempts to fill this void. US targets acquired by US and UK firms are empirically examined to determine whether a difference exists between the financial characteristics of these targets. A difference does exist and at least a part of this difference may be attributable to higher amounts paid by UK firms to acquire US targets, recorded as goodwill.

Since the mid-1970s, an increasing number of takeovers and mergers have occurred in the US. A number of these acquisitions have been made by foreign interests. Do foreign investors have an inherent advantage over US investors because of differences in the accounting practices of other nations as compared to those of the US? Many US accountants and Chief Executive Officers (CEOs) contend that this is indeed the case. For example, differences in the accounting for purchased goodwill, in the US and abroad, have caused a number of US businessmen to comment that the playing field is not level with respect to the manner in which acquisitions are accounted for and recorded in the financial statements.

In March 1990, Dennis Beresford, Chairman of the Financial Accounting Standards Board (FASB), discussed a concern which had been expressed by the chairman of a large, multinational, US-based corporation. This CEO wrote to the FASB in an attempt to persuade the Board to reconsider its rules for the accounting for acquired goodwill in the US. He cited current accounting practices as the major cause of the increased number of acquisitions of US companies by foreign investors.

In late 1987, the General Accounting Office (GAO) published a report which

suggested that investors in certain foreign countries enjoy an edge over their American counterparts in acquiring US companies because, everything else being equal, foreign interests are able to pay higher prices. Differences in the accounting for purchased goodwill is one of the reasons cited for this advantage. The advantage gained, noted the GAO report, is because of the impact of the accounting for goodwill on reported earnings: US accounting procedures require that goodwill be amortized against earnings. This amortization is not deductible for tax purposes, however. While many foreign interests are also required to amortize goodwill against earnings, amortization is deductible for tax purposes. Other foreign interests may charge goodwill directly against reserves with no impact on earnings. The GAO report states that an advantage is gained in these circumstances because earnings are of fundamental importance in assessing the performance of the firm and are viewed by financial statement users as a measure of investment and credit potential. Thus, management must exercise caution in considering the impact goodwill may have on future earnings when making merger/acquisition decisions.

Echoing these sentiments, a 1989 *Business Week* article indicated that if companies were to report losses caused by goodwill charges, shareholders would surely protest. Robert Willens of Lehman Brothers, Inc. commented on goodwill as follows in a May 23, 1991 *Wall Street Journal* article: "Sure it's just a book charge but people and the market are so concerned with reported earnings. The reality is that management is so concerned that there are any number of deals that just haven't been done because of goodwill."

At least two factors have led to the increased international interest in US companies: the globalization of business and the increase in the purchasing power of foreign currencies relative to the US dollar. Each of these factors has contributed to the large premiums offered in acquisitions of US firms. The premiums paid by foreign acquirers often have been higher than those paid by US firms. Thus, the playing field for mergers and acquisitions may not be level. This situation was addressed by Corry (1990) when he stated that "speculation in the financial community is that one of the reasons American companies did not top foreign bidders is that none could afford the high goodwill charge." A US company was the target in nine of the ten largest cross-border acquisitions made in 1988 and 1989.

The UK was selected as the foreign investor country for study because the UK is very similar to the US in terms of both the evolution and structure of mergers and acquisitions. The UK is also an appropriate subject because in recent years it has been the most active foreign investor in the US, both in terms of the number of acquisitions made and the dollar (pound) amount of investment involved. *Mergers and Acquisitions* reported that there was a total of 1076 foreign acquisitions of US companies made between 1986 and 1989 (264 in 1986, 220 in 1987, 307 in 1988, and 285 in 1989). These acquisitions had an aggregate dollar value of almost \$165 billion. The UK was involved in over a third (350) of these acquisitions (89 in 1986, 78 in 1987, 114 in 1988 and 69 in 1989). In each year during the period 1986-1989, the UK was the most active foreign interest in terms of activity, and from 1986 to 1988 it also led in terms of dollars (pounds) spent on US acquisitions, surpassed only by Japan (in 1989). UK firms spent over \$24 billion on US acquisitions in 1988 and an additional \$23.6 billion in 1987.

UK accounting practices related to goodwill have helped UK firms to be successful bidders in cross-border activity, particularly in the US. As in the US, there are no tax advantages related to goodwill in the UK. These factors make the UK a unique foreign acquirer to consider for purposes of this research.

The differences in the accounting for purchased goodwill in the US and the UK may be summarized as follows:

- (1) US – goodwill is amortized against earnings
- (2) UK – the entire amount of goodwill is charged directly against reserves (stockholders' equity).

This difference places US companies at a relative disadvantage when bidding against UK interests to acquire a firm because the earnings of UK firms are not affected by purchased goodwill.

This study examines the acquisitions of US firms by both US and UK companies. It focuses on the advantages accounting differences may provide in acquisitions by deriving a classificatory model comparing the financial characteristics of US firms acquired by UK and US companies.

The differences in the accounting for purchased goodwill and the advantage that it provides UK firms is considered. If UK companies are able to acquire US targets by paying a higher price and recording this excess price as additional goodwill without affecting reported income, then accounting rules do provide a definite advantage.

Prior Literature

As indicated above, an objective of this study is to develop a classificatory model to assist in determining whether foreign firms have an advantage in acquiring US targets because of accounting differences related to goodwill. A method of constructing such a model is to consider the profiles of firms which have previously been acquisition targets. Variables employed in the construction of this classificatory model are based on the results of prior studies. A review of this past research is discussed below.

Carleton et al. (1980) explored the financial characteristics of acquired firms for the Federal Trade Commission (FTC). A sample of 61 US firms acquired during 1976–1977 and 45 firms acquired during 1974–1975 was matched with a control sample of 1200 non-acquired companies. The variables considered included liquidity, indebtedness, profitability, activity, dividend policy, price-earnings, size, and valuation. Univariate results indicate that less debt is used by acquired firms and these companies are more liquid than non-acquired firms.

Rege (1984) employed multiple discriminant analysis (MDA) to identify those financial ratios of acquired entities which were important in foreign takeovers. A sample of 55 foreign, Canadian, and non-takeover firms was considered in this study. The ranking of the variables included in the multivariate setting was: (1) payout; (2) activity; (3) liquidity; (4) leverage; and (5) profitability.

Schwartz (1982) employed probit analysis and discriminant functions to determine the probability of acquisition in a sample of 186 firms during 1968–1977. The

probit model indicated that the following variables were significant: valuation; size; profitability; and retention of dividends.

Palepu (1986) employed logit analysis in an attempt to identify merger targets. A sample of 419 US firms (163 targets and 256 non-targets) was chosen for this study. The resulting model is statistically significant but has low explanatory power. Financial ratios which proved significant in the logit model were growth, size, leverage, and price-earnings.

Barnes (1990) used a multiple discriminant analysis model to predict takeover targets using a sample of 92 UK companies which had been acquired during 1986-1987 and a matched sample of 92 non-acquired companies with the same industry classification. The five ratios used as variables in a linear multiple discriminant model were: quick assets/current liabilities; current assets/current liabilities; pre-tax profit margin; net profit margin; and, return on shareholders' equity. The discriminant function was found to be significant at the 5 percent level.

This prior research in the area of analyzing the financial characteristics of acquisition targets plays a major role in the organization of this study. This analysis helps to define the variables which compose the classificatory model tested in this project.

Sample Selection and Data

A sample of US firms was selected from *Mergerstat Review*'s transaction roster of mergers which occurred during 1986-1989. The UK sample was also selected from this source and from the quarterly reports of "Foreign Investments in the US" from *Mergers and Acquisitions*.¹ Transactions selected for this study involved US companies acquired by firms from both the UK and the US.²

Table 1. US and (UK) sample breakdown

| | 1986 | 1987 | 1988 | 1989 |
|--|--------------------------|-------------|-------------|-------------|
| Surveys mailed | 69 (14) | 48 (17) | 77 (22) | 46 (20) |
| Information on goodwill marked "confidential" ^a | 8 (5) | 9 (7) | 6 (6) | 6 (0) |
| Annual report did not contain usable data ^b | 2 (1) | 5 (1) | 8 (4) | 2 (3) |
| Surveys not returned | 22 (7) | 13 (5) | 21 (3) | 12 (6) |
| Firms which contain missing data | 2 (0) | 0 (0) | 1 (0) | 1 (0) |
| Usable surveys | 35 (1) | 27 (4) | 41 (10) | 25 (11) |
| Overall response | 68% (47/69) ^d | 73% (35/45) | 73% (56/77) | 74% (34/46) |
| Rate ^c | 50% (7/14) ^e | 71% (12/17) | 87% (20/23) | 70% (14/20) |

^a These surveys were returned with the goodwill information marked "confidential" or "not available".

^b Annual reports were sent in response to these surveys, but the annual reports did not contain usable information. A follow-up letter was mailed to the companies but they refused to respond further.

^c Response rate is equal to (usable surveys + "confidential" information + annual report)/surveys mailed.

^d Overall response rate for US firms.

^e Overall response rate for the UK firms.

The US acquiring firm populations were 69, 48, 77, and 46 firms for the years 1986 through 1989, respectively. The UK acquiring firms were 14, 17, 23, and 20 for these years. Questionnaires were mailed to the Chief Financial Officer of all 314 acquiring firms.

Data availability also limited sample size. PC COMPUSTAT was employed to retrieve data for calculating ratios. In a few instances, not all ratios could be calculated because of missing data. These firms were eliminated from the sample. The final sample size of the targets acquired by US firms totaled 128,³ while the final sample for the firms acquired by UK firms totaled 26.⁴ The composition of these samples is provided in Table 1.

Two databases were considered. One contained data from the year prior to the acquisition. The second consisted of a three-year average of the data prior to the year of acquisitions. By using these two databases both the short-term and slightly longer-term characteristics were considered.

Variables

The model constructed for use in this study is composed of both variables employed in prior research and variables which deal directly with the issue of goodwill, a primary focus of this research. The variables taken from prior research are those that define a "prime takeover target". Prior literature dealing with the financial characteristics of acquisition targets was used. A comparison of the characteristics of the US targets acquired by both US and UK firms is made to determine whether a discernible difference in these characteristics exists. Relationships are predicted based on prior research explanations of the manner in which these variables define prime acquisition targets.

Goodwill (GW)

Differences in the accounting for goodwill in the UK and the US provide an advantage to UK companies and a disadvantage to US firms when bidding for US targets. The UK practice of writing-off goodwill directly against reserves rather than amortizing it against earnings, as a US firm is required to do under Generally Accepted Accounting Principles (GAAP), allows UK firms to pay a higher acquisition premium without affecting their subsequent earnings.

The ratio used in the model to proxy for goodwill is composed of the goodwill information provided by the questionnaire divided by a measure of the market value of the acquired firm in the year of the acquisition. Deflation of the goodwill amount is necessary to scale the variable for differing acquisition values. Measuring goodwill in this manner incorporates the acquired firm's value into the variable. Goodwill is evaluated against an explicit measure of the acquired firm's value.

If the difference in the accounting for goodwill offers an advantage to UK firms in acquiring US targets, the values for the goodwill of the UK firms should be higher than the goodwill amounts for the US firms.

Inclusion of the goodwill variable in this research tests whether UK firms are using the advantages offered by current accounting standards to acquire US targets.

Profitability (PROF)

The initial variable selected from prior empirical literature is profitability. Profitability was considered by Samuels and Tzannos (1972), Schwartz (1982), Barnes (1990), Wansley and Lane (1983), and Carleton, Harris and Stewart (1980). Earnings before interest and taxes deflated by total assets are used to proxy for the profitability variable. This ratio is an estimate of the net operating profit rate of return, a reflection of operating performance.

The profitability of a firm may indicate the effectiveness or ineffectiveness of its management. A firm which has experienced a low level of earnings may be able to increase its profitability in a takeover which replaces existing ineffective management. The basis for this view is potential; if the firm exhibits the potential to be an attractive investment then another company may decide to make the acquisition.

Valuation (VAL)

Valuation is also considered in the model. Valuation has been analyzed extensively in a number of projects dealing with merger targets, including Palepu (1986) and Stevens (1973). As a proxy for valuation, the model employed in this research uses market value of common equity divided by the book value of common equity. Valuation ratios indicate the existence of a "cheap buy" in the acquisition market. Prior literature defines a prime acquisition target as a firm which is low in value.

A firm which wishes to invest in a new enterprise or a different product line has two alternatives. It may either acquire a firm which already has the required assets in place, or it may choose to purchase new assets. Of course, this decision would be based on the relative costs and benefits of the two choices.

If UK firms truly have an advantage in acquiring US targets it would be expected that UK companies would acquire firms with lower valuation ratios.

Price-Earnings (P/E)

The price-earnings ratio (P/E) is also used in the model. Stevens (1973), Samuels and Tzannos (1972), Palepu (1986), and Wansley and Lane (1983) all studied the P/E ratio of the acquired firm in their analyses of merger targets. The price-earnings variable is proxied for by the price per share divided by the earnings per share of common stock. This ratio is a measure of the market's evaluation of the firm. When examining a sample of acquisition targets, firms with higher P/E ratios may be considered to be more attractive targets because interpreting the ratio in the manner described above indicates that the market views the future prospects of the firm as favorable. A higher P/E ratio indicates that a firm's future prospects are encouraging and it should be considered as an acquisition target.

Leverage (LEV)

The leverage variable provides an indication of the debt capacity of the firm as well as its financial risk. Several studies have examined leverage, including Samuels and Tzannos (1972), Carleton et al. (1980), Rege (1984), and Stevens (1973).

Research based on agency theory states that firms with low financial leverage frequently become acquisition targets. Low debt ratios are regarded as an indication of underutilized debt capacity. An inefficient management may underutilize its debt capacity, which may be viewed as an asset by potential acquirers. Under this definition of assets, underutilization of debt capacity would be realized as a lost opportunity cost to the shareholders of the target firm. Lower leverage may also cause additional agency costs, such as avoidance of market monitoring associated with the issuance of debt. In this situation shareholders must assume the additional expense of non-market monitoring, which may be less effective. From an agency viewpoint, lower leverage causes a number of problems and is a characteristic of acquisition targets.

Leverage has been proxied for by a number of ratios in prior research. The ratio chosen as a proxy for leverage in this study is long-term debt divided by total assets. Long-term debt has a significant impact on the debt covenants and the future debt capacity of a firm. The denominator (total assets) acts as a deflator for the size of the target.

Liquidity (LIQ)

Liquidity is a variable which has been studied extensively in the literature. Samuels and Tzannos (1972), Rege (1984), Stevens (1973), Palepu (1986), and Carleton et al. (1980) all incorporated liquidity into their models. Shareholders are not receiving their expected return when a firm's liquidity is excessive: firms with this characteristic are said to possess idle resources. As with debt capacity, idle resources are viewed as assets. These resources may offer improved returns if invested. Managers of the target firm may be risk averse or unable to invest the firm's resources and receive an adequate rate of return, causing them to retain rather than utilize these resources. Replacing existing management in an acquisition may alleviate the underutilization of assets. A firm which has liquidity difficulties may become an acquisition target rather than bankrupt. Most bankruptcy studies include liquidity as a prime factor in determining whether a firm will go bankrupt.

To represent liquidity in the model, net working capital divided by total assets is used in this study.

Growth (GWTH)

The rate of growth of a firm has been studied comprehensively in the acquisition target literature by numerous researchers, including Palepu (1986), Schwartz (1982), and Wansley and Lane (1983). Growth is viewed in much the same manner as profitability, as an indicator of past performance. There are a number of viewpoints

of the impact of growth on target attractiveness. One viewpoint is that a firm which has experienced little growth and remains stagnant may nevertheless be an attractive acquisition target. By replacing existing management, the acquiring firm may infuse energy into the target and increase its growth. Depending upon the strategy of the acquiring firm, a firm with a low rate of growth may be an attractive target.

Other firms may view expanding firms as attractive targets. The prior growth of a firm may indicate future opportunities for growth. A young firm which has experienced rapid growth may be an acquisition target for a mature firm attempting to capitalize on the future growth potential of the target. Acquisition strategy may be a decisive factor in determining whether a high or low growth rate firm is acquired.

A firm's opportunities for growth are important in its future success, regardless of the strategy employed in deciding which firm to acquire. In attempting to capture the variable growth opportunities, growth in sales has been selected to proxy for the variable growth.

In addition to deflation by measures of firm size, further standardization of the variables employed in this study is necessary. Variables including profitability, valuation, price-earnings, leverage, liquidity, and growth, are standardized by industry averages. COMPUSTAT provides industry sums for all the components of the financial ratios used in this research.

Industry averages are necessary because a target is viewed as attractive (or unattractive) relative to other firms in its particular industry. Ratios which are considered to be high in one industry may be average or even low in another. The standardization of these variables by calculating the difference of the firm specific ratio and the industry average is necessary to minimize any industry differences. In this manner, standardization provides positive data for those firms with ratios above the industry average and negative data for ratios below the industry average.

The variables outlined above are summarized in Table 2. Analyses of these variables is made both univariately and multivariately. The model used in this research is:

$$\text{Acquiring firm} = \alpha + \text{GW} + \text{PROF} + \text{VAL} + \text{PE} + \text{LEV} + \text{LIQ} + \text{GWTH} + \varepsilon$$

UK vs. US

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Table 2. Variables used in univariate and multivariate analysis

| Variable | Abbreviation used in the model | Ratio used as a proxy |
|-----------------------------|--------------------------------|--|
| Goodwill | GW | Goodwill/market value of firm at acquisition |
| Profitability ^a | PROF | EBIT/total assets |
| Valuation ^a | VAL | Market value/book value |
| Price-earnings ^a | P/E | price per share/earnings per share |
| Leverage ^a | LEV | Long term debt/total assets |
| Liquidity ^a | LIQ | Net working capital/total assets |
| Growth ^a | GWTH | (Sales _t ^b - Sales _{t-1})/Sales _t |

Model: Acquiring firm = $\alpha + \text{GW} + \text{PROF} + \text{VAL} + \text{PE} + \text{LEV} + \text{LIQ} + \text{GWTH} + \varepsilon$

^a These variables will be deflated by industry averages.

^b t = year t .

Methodology

Many of the variables which have been selected for use in this study are basic to the empirical research concerned with the characteristics of target firms. Steps were taken to select those variables which have been extensively used in previous studies in predicting and defining attractive acquisition targets. A model is constructed to study the contention of many US accountants and CEOs that UK accounting standards offer unique advantages to UK firms in acquiring US targets because of the rules governing the accounting for goodwill in the UK.

Probit analysis is used to evaluate models which include the seven variables discussed previously. Statistics are run on two databases: the year prior to acquisition and a three-year average.⁵

Results

Probit analysis is conducted on two databases. The first contains data for the year prior to the acquisition of the target firm, while the second includes data which are averaged over a three-year period prior to the acquisition of the target. The second database allows investigation of a longer time-frame in order to examine those characteristics of an acquisition target which may be important over a longer period of time and which may differ from the shorter time period.

Before multivariate analysis was conducted on the data, a correlation matrix was run on each of the databases. Significant correlation among the variables in a model may cause problems with multicollinearity, or interdependence of the variables. Multicollinearity can cause the results obtained for a multivariate model to be unreliable. Pearson correlation coefficients were computed for all of the variables in the short- and long-run databases. No significant correlation was found to exist in either database.

Table 3 provides the results of the model for the database containing ratios from one year prior to acquisition (i.e., short-run). The GW, VAL, and P/E coefficients

Table 3. Short-run results of multivariate probit analysis (Year prior to acquisition)

| | Coefficients | Std. error | MLE |
|------|--------------|------------|----------|
| GW | -0.09180 | 0.06827 | -1.345* |
| PROF | -2.52578 | 1.23389 | -2.047** |
| VAL | 0.04058 | 0.03505 | 1.158 |
| P/E | -0.00081 | 0.00084 | -0.970 |
| LEV | 0.52540 | 0.72378 | 0.726 |
| LIQ | 1.24145 | 0.65779 | 1.887* |
| GWTH | 0.17205 | 0.33455 | 0.514 |

Goodness-of-fit= 12.3983* (with 7 degrees of freedom).

Estimated $R^2 = 0.24162$.

Adjusted estimated $R^2 = 0.21046$.

Percentage of observation predicted correctly = 83.007%.

* Significant at the 0.10 level of significance.

** Significant at the 0.05 level of significance.

coincide with the rationales describing the predicted signs set forth previously. GW and LIQ are statistically significant at the 0.10 level of significance, while PROF is significant at the 0.05 level in the probit model.

Goodwill is significantly higher for targets acquired by UK firms. Many of the reasons for significantly higher goodwill, according to US accountants, are linked to advantages offered by the accounting standards of the UK. The fact that goodwill can be immediately charged to reserves in the UK, rather than amortized against earnings as required in the US, is a benefit for UK firms seeking to acquire a US target.

UK companies tend to acquire more profitable US targets than US acquirers. This is demonstrated by the negative, significant coefficient attached to the PROF variable. UK firms are more likely, according to the short-run model, to acquire firms with greater earning power than US companies. Firms which are perceived as having earning power have a higher rate of return than average and, therefore, are an attractive investment for a firm in the acquisition market.

LIQ is also statistically significant in the probit model for the short-run database. The LIQ coefficient is positive, which suggests that US targets acquired by US firms are more liquid than those acquired by UK companies. Again, the issue of firm strategy is introduced. The significance of this variable may be interpreted in one of two ways. First, US firms strapped for cash may be attempting to acquire targets with idle resources. A second interpretation is that UK firms are more willing to assume risk and acquire a firm which is low in liquidity and which, with some assistance, may prove to be a wise investment. These two explanations may contribute to the positive sign of the LIQ variable. The remaining four variables in the model were not significant at the 0.10 level.

Examining the overall model and the goodness-of-fit in a multivariate context, the short-run model provides an explanation of the differences between the US acquisition targets acquired by US and UK firms. A χ^2 statistic, measuring the overall fit of the model, is 12.3983 with 7 degrees of freedom, which is significant at the 0.10 level of significance. The model has an R^2 value of 0.24162, and an adjusted R^2 value of 0.21046. An adjusted R^2 value modifies the original R^2 value for the number of variables in the model.

Table 4. Long-run results of multivariate probit analysis (three years prior to acquisition)

| | Coefficients | Std. error | MLE |
|------|--------------|------------|---------|
| GW | -0.09267 | 0.06859 | -1.351* |
| PROF | -1.28762 | 0.72747 | -1.770* |
| VAL | 0.06282 | 0.04868 | 1.291* |
| P/E | -0.00177 | 0.00166 | -1.063 |
| LEV | 0.51625 | 0.86702 | 0.595 |
| LIQ | 1.28913 | 0.70176 | 1.837* |
| GWTH | -0.04372 | 0.26477 | -0.165 |

Goodness-of-fit = 9.6090 (with 7 degrees of freedom).

Estimated R^2 = 0.12587.

Adjusted estimated R^2 = 0.08944.

Percent of observation predicted correctly = 82.353%.

* Significant at the 0.10 level of significance.

The long-run database containing ratios which are averaged over a three-year period prior to acquisition is also evaluated in a multivariate context. Results of this evaluation are presented in Table 4. Once again, all of the variables included in the model follow the rationales offered earlier in this paper. The variables GW, PROF, and LIQ are again found to be statistically significant at the 0.10 level of significance, along with the variable VAL.

VAL, as viewed in this study, is an indicator of "cheap buys" in the acquisition market. UK companies choose to acquire US targets with lower valuation (i.e., "cheaper buys") than their US counterparts. This strategy is understandable, since firms choosing to invest in a new enterprise are faced with two choices on entering the market. They may either acquire a firm which already exists or they may purchase the necessary assets. Since UK firms have advantages because of their accounting standards, it is not surprising that they might choose the former rather than the latter option in order to expand their firm.

The remaining significant variables have been discussed previously and the explanations offered for their statistical significance hold for both the long- and the short-run. The other three variables analyzed in the model are not significant at the 0.10 level.

Unlike the short-run model, the overall goodness-of-fit for the long-run model was not found to be significant. A χ^2 value of 9.6090 with 7 degrees of freedom falls short of the 12.02 threshold for significance. The long-run model has an R^2 value of 0.12587. After further adjustment for the seven variables included in the model, the adjusted R^2 value decreases to 0.08944. The overall significance of the model is not impressive, but the fact that the short-run and long-run results are similar, in terms of significant variables, does add to the credibility of the findings.

The results of the models analyzed in this study coincide for the two sets of data examined. The models prove to be successful in differentiating between US acquisition targets which were acquired by UK companies versus those acquired by US firms. GW, PROP and LIQ are found to be statistically significant when analyzing data collected for a year prior to acquisition. On the other hand, GW, PROF, VAL, and LIQ are significant when examining the data for a longer time period, an average of three years prior to acquisition.

Opportunities for Additional Research

The results of this study suggest a number of possibilities for further research. Research involving a direct test of goodwill differences between the UK and the US is appropriate. A direct test will be difficult to conduct, however, since goodwill information is often confidential. A study of acquisition premiums tied directly to goodwill may also lend support to the results obtained in this study.

Finally, international research is becoming more widespread as nations move toward a global business network. Many international researchers are considering multiple countries in their research. With the number of countries acquiring US companies and the differences in international accounting standards which exist, the opportunities for further research are numerous. Japan, France, Germany, Canada,

and the Netherlands are all mentioned in the goodwill literature as countries that have advantages when considering accounting standards pertaining to goodwill.

Summary

Many accountants and CEOs in the US have complained, often vehemently, that in making acquisitions of US targets, many foreign companies have advantages over their US counterparts because of differences in the standards governing the accounting for goodwill. The UK was chosen for this study because over the past 10 years it has been one of the largest acquirers, in terms of both number of acquisitions and dollar amounts. The UK, as the US, does not offer a tax advantage for goodwill as is the case with many of the other nations active in the US acquisition market (i.e., Japan, Germany, Canada, and the Netherlands).

Profitability, valuation, price-earnings, leverage, liquidity, and growth were chosen for inclusion in this research because of their use in prior studies dealing with acquisition targets. Goodwill was also included in the analysis to determine whether UK firms have a competitive advantage over US companies in acquiring US targets.

Multivariate probit analysis was conducted on the seven variables for both short- and long-run time-frames. Multivariate short- and long-run results proved to be similar, adding to the robustness of the findings of the study.

This analysis demonstrated that three variables were significant for the short-run data. GW, PROF, and LIQ added to the significance of the overall short-run model. Four variables proved to be significant when the long-run data were analyzed: GW, PROF, VAL, and LIQ. Unlike the short-run model, the long-run model did not provide a statistically significant goodness-of-fit.

There have been a number of studies which have discussed descriptively the differences in accounting for purchased goodwill among countries, and the disadvantages US firms have in acquiring US targets when compared to foreign investors. This research tests the assertion that the "playing field is not level" empirically by examining US and UK acquirers and the financial characteristics of the US targets acquired. There has been little if any empirical research in this area.

The results of this study indicate that there is a difference in the amount of premiums paid in acquisitions of US targets between US and UK buyers. The goodwill variable tested proved to be significant in both the short- and long-run databases. The explanation for this significance is the differences which exist in the accounting for purchased goodwill in the US and UK. In view of these findings, perhaps it is appropriate to suggest that the FASB re-examine its current position on the accounting for purchased goodwill.

Notes

1. Four categories of businesses were excluded from the selection of sample firms: banking and finance, insurance, real estate and brokerage, investment, and management consulting services. These industries were excluded because of variations in accounting practice and/or legal constraints of takeover activity.

- Several constraints were imposed upon acquired firms selected for this study. Minority acquisitions or acquisitions of plants or divisions were eliminated. Also, the firms involved in the acquisitions were tested to ascertain that data were available on COMPUSTAT for the test period (1983-1988).
- Firms which used the pooling-of-interest method were also included in the sample number listed. The use of the pooling-of-interest method eliminated the need to account for goodwill in the merger/acquisition transaction. The choice has to be considered when analyzing firms and goodwill, since the advantage of charging goodwill to reserves, enjoyed by the UK, are eliminated if pooling is used by US acquiring firms. There were 6, 11, 3, and 7 pooling transaction included in the sample 1986-1989 respectively.
- There is no reason to believe that the number of firms in the sample does not provide a representative sample of British acquisitions of US firms.
- Probit analysis is an alternative methodology designed to handle discrete dependent variables, while retaining much of the power of ordinary least squares (OLS). The models used in probit and OLS are identical:

$$Y_i = \alpha + bX_i + \epsilon_i$$

The sole difference in the analysis is that probit analysis is intended to handle a discrete dependent variable (0 or 1 in the study reported in this paper) rather than a continuous variable, as is the case with OLS.

This study is constructed with a discrete dependent variable, $Y = 1$ if the acquiring firm is from the US and $Y = 0$ if the acquiring firm is from the UK. In order to apply a methodology to the model proposed in this study, the construction of a model which handles discrete dependent variables is considered. Probit analysis, rather than OLS, is chosen to examine the data in this study because of its power in dealing with these discrete dependent variables.

When treating discrete dependent variables, many of the OLS assumptions regarding the error term (ϵ_i) are violated. The error terms no longer normally distributed and is heteroskedastic; consequently, the OLS estimates of parameters are biased, inefficient and inconsistent. Probit analysis remedies these problems by using MLE as a calculation device in analyzing the data. MLE provides estimates of parameters which are unbiased, asymptotically efficient and consistent. Probit analysis may be used to test the significance of the independent variables as well as the overall model. For these reasons, probit analysis has been used in this study to test the proposed model in a multivariate setting.

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A Transfer Pricing Decision Model for Multinationals

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Key words: International transfer pricing; Decision making; Corporate tax; Subsidiary profits

Abstract: *This paper formulates a model to determine the worldwide profit function for a multinational firm. The model allows for changes in (1) the US income tax rate, (2) the foreign tax rate, (3) the withholding rate, and (4) the percentage of foreign income dividend to the parent corporation. This model will aid corporate management in evaluating the effect of managerial decisions on international transfer pricing.*

The proliferation of multinational enterprises and their activities has constituted perhaps the most significant recent development in international business. In 1986, according to the UN Center for Transnational Corporations, the total value of investment by multinationals amounted to about \$700 billion with annual flows of approximately \$50 billion (Das et al., 1988).

The primary objective of a multinational company is to increase its worldwide profit (Tang, 1992). To do so, however, a multinational needs to analyze continuously its global competitive position. Such an analysis must consider not only the profitability of its sales and investments in both domestic and foreign markets, but also consider how its pricing affects its own position and that of its affiliates as well as how its inter-corporate transfers, their prices, and the competitive positions of its members affect each other.

Compared to strictly domestic businesses, pricing considerations for multinationals in international business are more complicated: a firm must consider at least two competitive markets, two governments, and consequently, two sets of laws. But the large corporations which dominate today's commerce can exploit their advantages in both domestic and international markets by such practices as dumping, price discrimination, and inter-company pricing. In contrast to David Ricardo's world of free competition and perfect knowledge, today's world of imperfect competition and knowledge gives ample opportunity and incentive for multinationals *not* to price uniformly (Kressler, 1971).

There are many factors, such as decentralization, performance evaluation, and taxes, that affect inter-company transfer prices of a multinational company (Borkowski, 1990). Decentralization and performance evaluation can be addressed by negotiating the transfer price between the parent and the subsidiary. To curb the incentive for multinationals to take advantage of differential tax rates, tax authorities in most countries require an arm's length approach (the amount which is charged or would be charged in independent transactions by unrelated parties or under similar circumstances considering all the relevant facts) to price inter-affiliate corporate transactions (Arpan and Radebaugh, 1981; Borkowski, 1990; Tang, 1992). Central to this approach is the availability of an existing market price. The problem, however, is that market prices are often unavailable or unsatisfactory (Rugman, 1985). As a result, such transfer prices are inevitably determined by internal accounting practices.

Existing literature on multinational transfer pricing has mostly focused on the tax differentials and exogenous attempts by government for the misallocation of real resources (see Eden, 1985, for a comprehensive literature review). In contrast, this paper adopts a decision-making perspective: it develops a decision model to facilitate management of a US based parent company in evaluating the effect of alternative transfer prices on the worldwide profit of the firm. This model is formulated in the next section, and is followed by a section which provides a numerical example to show the validity and application of the developed formulas, and to demonstrate how the implicit aggregate impacts of inter-affiliate transfer pricing affect the parent and worldwide profit functions of the multinational corporation. The final section summarizes the paper.

A Model of the Profit Function for Multinationals

The need for transfer pricing arises in any firm that has several profit centers that exchange goods or services. Typically, the objective of a multinational is to maximize its after-tax worldwide profit; therefore, the transfer price chosen should reflect this overall objective. Figure 1 depicts the use of inter-corporate pricing to maneuver profits from high-tax-rate countries into lower ones. A parent company can sell goods at prices *below* cost to its foreign subsidiaries in lower-tax-rate countries and buy from them at higher-than-market prices. The resultant loss in the parent's high-tax country is more than offset by the profits of the subsidiaries in low-tax countries. In the process the multinational achieves a considerable increase in its global after-tax profit (see Fig. 2). Thus, the selection of transfer prices is particularly important to multinational firms.

The tax reduction objective, however, must be adopted cautiously and within the constraints of the tax laws in the associated countries. For example, in the USA the Internal Revenue Service may reallocate income or deductions in order to prevent tax evasion or to reflect clearly the income of related businesses (Scholes & Wolfson, 1992).

Since the tax effect is an important element in inter-corporate transfer pricing for multinationals, the decision model to formulate the worldwide profit is developed

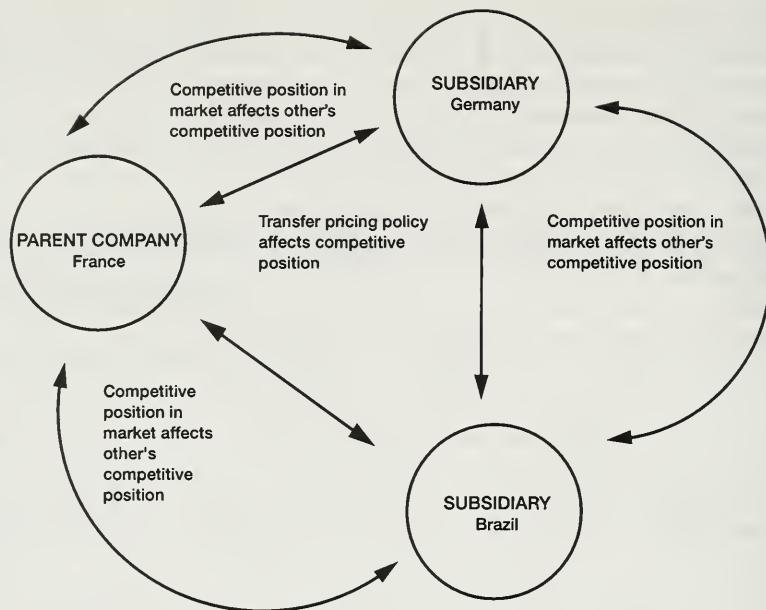


Fig. 1. Transfer pricing and competitive position. (Source: Arpan and Radebaugh, p. 263. Reprinted with permission from the *International Accounting and Multinational Enterprises*, ©1981 Warren Gorham Lamont, 210 South St., Boston, MA, 02111. All rights reserved)

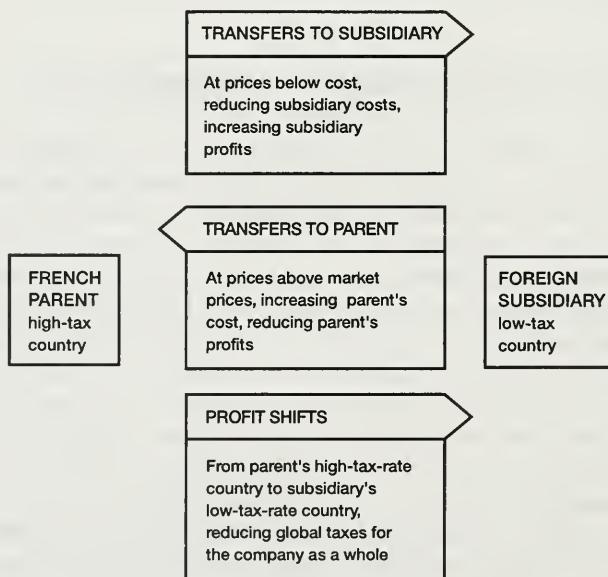


Fig. 2. Transfer prices, taxes and profits. (Source: Arpan and Radebaugh, p. 237. Reprinted with permission from the *International Accounting and Multinational Enterprises*, ©1981 Warren Gorham Lamont, 210 South St., Boston, MA, 02111. All rights reserved)

on an after-tax basis. The following variables are used in the model: (1) the earnings of the US parent corporation; (2) the earnings of the foreign affiliate; (3) the earnings retention rate in the foreign affiliate's country; (4) the percentage of affiliate's income paid as a dividend to the parent; (5) the US corporate income tax rate; and (6) the corporate income tax rate of the foreign affiliate (including the withholding tax rate in the foreign affiliate's country).¹

In order to avoid double taxation of earnings of multinationals, US tax law provides a foreign tax credit (FTC) for taxes paid in a foreign country on income also taxed in the USA. The allowable FTC is the sum of the direct credit for withholding tax plus the deemed paid credit for corporate tax paid by foreign affiliates, subject to an overall limit.² Moreover, the model development shows the integration of the after-tax profit function of the US parent with the profit of its affiliates to derive the worldwide profit function of the US-based multinational firm.

The after-tax profit of a US parent is composed of US source income (domestic earnings), foreign source income, the US tax rate and the FTC. Those components can be expressed as follows:

$$\text{After-tax profit of a US parent} = [\text{taxable income: US source income} + \text{foreign source income}^3] - [(\text{taxable income})(\text{US corporate tax rate}) - (\text{FTC})] \quad (1)$$

As stated earlier, the allowed FTC should not exceed the overall upper limit of the FTC for the period, otherwise the overall limit is applied. Accordingly, Eq. (1) can be rewritten as:

$$\text{After-tax profit of a US parent} = \text{taxable income} - [(\text{taxable income})(\text{US corporate tax rate}) - (\text{allowable tax credit: the lower of (1) computed actual tax credit according to foreign affiliates' corporate and withholding taxes; and (2) the overall upper limit of tax credit})] \quad (2)$$

Therefore, the two components of the FTC are critical inputs in determining the after-tax profit of a US parent. The next part of this section develops the two components of the FTC, and then incorporates them into a single after-tax profit function of the US parent.

Computation of Actual FTC According to Foreign Affiliates' Corporate and Withholding Taxes:

In order to formulate the amounts of the FTC let:

π_1 = earnings of a US parent corporation

π_i = earnings before foreign tax of foreign affiliate i ($i \neq 1$) during the period

R_i = earnings retention rate in affiliate i 's country

$1-R_i$ = percentage of affiliate i 's ($i \neq 1$)⁴ income paid as a dividend to the parent. The amount $\pi_i(1-R_i)$ represents the amount of affiliate i 's earnings during the period included in the foreign source income of the parent⁵

T_i = corporate income tax rate of foreign affiliate i

T_1 = US corporate income tax rate applicable to the US parent's income during the period

$$T_{wi} = \text{withholding tax rate of affiliate } i \quad (3)$$

The following tax elements are derived from the above notations:

$$\text{The foreign corporate tax paid is } \pi_i T_i \quad (4)$$

Accordingly, from Eqs. (3) and (4) earnings after the foreign corporate tax for affiliate i are

$$\pi_i (1-T_i) \quad (5)$$

Dividends to the US parent are

$$\pi_i (1-T_i) (1-R_i) \quad (6)$$

Since the foreign withholding tax rate for affiliate i is T_{wi} the net dividends received by the U.S. parent from foreign affiliate i is $\pi_i (1-T_i) (1-R_i) - \pi_i (1-T_i) (1-R_i) T_{wi}$, which is equivalent to

$$\pi_i (1-T_i) (1-R_i) (1-T_{wi}) \quad (7)$$

The actual FTC allowed for having paid taxes in foreign affiliates' i ($i \neq 1$) host countries is composed of the following two components:

(1) Direct credit for withholding tax in affiliate i 's country based on Eq. (7) is:

$$\pi_i (1-T_i) (1-R_i) T_{wi} \quad (8)$$

(2) Deemed paid credit: this component is computed as (dividend to the US parent) (foreign income tax)/(earnings after foreign tax).⁶ Accordingly, from Eqs. (6), (4), and (5) the deemed paid credit is equivalent to:

$$\pi_i T_i (1-R_i) \quad (9)$$

Thus, from Eqs. (8) and (9) the total actual tax credit for all foreign affiliates ($i=2, 3, \dots, I$), composed of the direct credit for withholding tax and the deemed paid credit, can be expressed as follows:

$$\sum_{i=2}^I \pi_i (1-R_i) [(1-T_i) T_{wi} + T_i] \quad (10)$$

Overall Upper Limit of the FTC

On the other hand, the overall limit set by the Internal Revenue Code as an upper limit of the FTC is (foreign source income) (US tax liability)/(total US and foreign sources income).⁷ The amount of the foreign source income included in the US parent income is composed of dividends paid plus the deemed paid credit. Their total is known as grossing up the dividends, and can be formulated from Eqs.(6) and (9) as follows:

$$\sum_{i=2}^I \pi_i (1-T_i) (1-R_i) + \sum_{i=2}^I \pi_i T_i (1-R_i) = \sum_{i=2}^I \pi_i (1-R_i) \quad (11)$$

The U.S. tax liability is⁸

$$\sum_{i=1}^I \pi_i(1 - R_i)T_1 \quad (12)$$

The total of the US and foreign sources income is

$$\sum_{i=1}^I \pi_i(1 - R_i) \quad (13)$$

Thus, from Eqs. (11), (12) and (13) the overall upper limit of the FTC is equivalent to:

$$T_1 \left(\sum_{i=2}^I \pi_i(1 - R_i) \right) \quad (14)$$

Therefore, to determine the after-tax profit of a US parent firm in a given period, the FTC applied is the total actual tax credit of all foreign affiliates formulated in Eq. (10) or the overall upper limit formulated in Eq. (14), whichever is lower.⁹ The subsequent analysis derives the after-tax profit of a US parent firm separately for the two limiting factors.

After-tax Profit of a US Parent: Foreign Tax Credit Based on Actual Foreign Affiliates' Corporate and Withholding Taxes

In Eq. (2) when the FTC is based on the actual foreign affiliates corporate and withholding taxes: after tax income of a US parent = [taxable income: US source + foreign source income] – [(taxable income)(US corporate tax rate) – (FTC based on actual foreign affiliates' corporate and withholding taxes)]

Accordingly, based on the derivations in Eqs. (13), (12), and (10) respectively, Eq. (2) can be rewritten as:

$$\sum_{i=1}^I \pi_i(1 - R_i) - \left\{ \sum_{i=1}^I \pi_i(1 - R_i)T_i - \sum_{i=2}^I \pi_i(1 - R_i)[(1 - T_i)T_{wi} + T_i] \right\} \quad (15)$$

Since $\sum_{i=1}^I \pi_i(1 - R_i)$ can be expressed as:

$$\pi_1(1 - R_1) + \sum_{i=2}^I \pi_i(1 - R_i) \quad (16)$$

then Eq. (15) is equivalent to

$$\begin{aligned} & \pi_1(1 - R_1) + \sum_{i=2}^I \pi_i(1 - R_i) - \pi_1(1 - R_1)T_1 - \left\{ \sum_{i=2}^I \pi_i(1 - R_i)T_1 \right. \\ & \left. - \sum_{i=2}^I \pi_i(1 - R_i)[(1 - T_i)T_{wi} + T_i] \right\} \end{aligned} \quad (17)$$

Since all the parent earnings are retained, that is $(1-R_1) = 1.0$, then Eq. (17) can be expressed as:

$$\pi_1 + \sum_{i=2}^I \pi_i(1-R_i) - \pi_1 T_1 - \left\{ \sum_{i=2}^I \pi_i(1-R_i)[T_1 - ((1-T_i)T_{wi} + T_i)] \right\} \quad (18)$$

Rearranging terms, this expression is equivalent to:

$$\pi_1(1-T_1) + \sum_{i=2}^I \{\pi_i(1-R_i)[1 - (T_1 - T_i - T_{wi}(1-T_i))] \} \quad (19)$$

Substituting DE (domestic earnings for the US parent firm) for π_1 and using π_1 to denote the after-tax profit function of the US parent firm, Eq. (19) is equivalent to:

$$\pi_1 = DE(1-T_1) + \sum_{i=2}^I \{\pi_i(1-R_i)[1 - (T_1 - T_i - T_{wi}(1-T_i))] \} \quad (20)$$

This is the after-tax profit function of a US parent firm based on the foreign affiliates corporate and withholding taxes.

In the case of no withholding taxes, π_1 reduces to:

$$\pi_1 = DE(1-T_1) + \sum_{i=2}^I \pi_i(1-R_i)(1-T_1 + T_i) \quad (21)$$

After-tax Profit of a US Parent: Foreign Tax Credit Based on the Overall Upper Limit

In Eq. (2) when the FTC is based on the allowable overall upper limit: After-tax income of a US parent = [taxable income: US source income + foreign source income] - [(taxable income) (US corporate tax rate) - (FTC based on the allowable overall upper limit)].

Accordingly, based on Eqs. (13), (12), and (14), respectively, Eq. (2) above can be rewritten as follows:

$$\sum_{i=1}^I \pi_i(1-R_i) - \left[\sum_{i=1}^I \pi_i(1-R_i)T_1 - \sum_{i=2}^I \pi_i(1-R_i)T_1 \right] \quad (22)$$

Based on Eq. (16), expression (22) can be rewritten as:

$$\pi_1(1-R_1) + \sum_{i=2}^I \pi_i(1-R_i) - \pi_1(1-R_1)T_1 - \left[\sum_{i=2}^I \pi_i(1-R_i)T_1 - \sum_{i=2}^I \pi_i(1-R_i)T_1 \right] \quad (23)$$

In the above expression the last term between brackets is zero, and since all the parent earnings are retained, that is $(1-R_1) = 1$, expression (23) is equivalent to:

$$\pi_1(1-T_1) + \sum_{i=2}^I \pi_i(1-R_i) \quad (24)$$

Substituting DE (domestic earnings for the US parent firm) for π_1 and using π_1 to denote the after-tax profit function of the US parent firm, Eq. (24) is equivalent to:

$$\pi_1 = DE(1 - T_1) + \sum_{i=2}^I \pi_i(1 - R_i) \quad (25)$$

This is the after-tax profit function of a US parent firm based on the allowable overall limit of the FTC. Generally, the above derivations of the parent profit functions (20), (21), and (25) demonstrate the integrative nature of the parent's profit function with other affiliates' profits.

Worldwide Profit Function

The earlier analysis now lends itself to deriving a worldwide profit function for a multinational. Based on the derivation of the parent's profit function π_1 in expressions (20) and (21), part of the parent's share in foreign affiliates' income is retained in subsidiaries whose earnings retention rate (R_i) is greater than zero. This amount represents the total parent share in the after-tax income retained in foreign affiliates, and can be expressed as follows:

$$\sum_{i=2}^I \pi_i R_i(1 - T_i) \quad (26)$$

Accordingly, the worldwide profit function of the entity is the sum of expressions (20) or (21) and (26), and can be expressed as:

$$\pi_W = \pi_1 + \sum_{i=2}^I \pi_i R_i(1 - T_i) \quad (27)$$

Where:

- π_W = the worldwide profit function after considering the effects of international taxes
- π_1 = after-tax profit function of the parent firm derived from expressions (20), (21), or (25)
- π_i = earnings before tax of foreign affiliate i ($i \neq 1$). If π_i is expressed in currency other than that of the parent firm, an appropriate conversion factor is to be applied to express it in the parent's currency

A Numerical Example

The following example demonstrates the use of the formulas for a US-based multinational corporation and the implicit aggregate impact of inter-affiliate pricing on the parent and worldwide profit. Assume that country A has a high income tax rate (50%) while country B has a relatively low income tax rate (20%).

Assume that the US parent company achieved Income of \$800 000 DE as a consequence of inter-affiliate quantity and transfer pricing decisions. Further, for the purpose of simplicity, assume the US parent has a flat 34 percent US corporate tax rate. The foreign source income is composed of the results of its subsidiaries in

countries A and B as follows:

1. Income of the country A wholly owned subsidiary is \$200 000 (π_2) based on the quantity and price of units transferred, taxed at a 50% rate (T_2). All the net income after tax is declared as a dividend¹⁰ ($R_2 = 1.0$) and its withholding tax rate is 10% (T_{W2}).
2. Income of the country B wholly owned subsidiary is \$200 000 (π_3), based on the quantity and price of units transferred, taxed at a 20% rate (T_3). Fifty percent of its net income after tax is declared as a dividend ($R_3 = 0.5$) and its withholding tax rate is 10% (T_{W3}).

Corporate and withholding taxes, FTCs and after-tax profit of the US parent firm are calculated as follows:

Foreign source income

| | <i>Country A subsidiary</i> | <i>Country B subsidiary</i> |
|-----------------------------|---------------------------------|---------------------------------|
| Earnings before foreign tax | \$200 000 | \$200 000 |
| Foreign corporate tax | 100 000 | 40 000 |
| Earning after foreign tax | <u>\$100 000</u> | <u>\$160 000</u> |
| Dividend to the US parent | 100 000 | 80 000 |
| Withholding tax | 10 000 | 8 000 |
| | <u>\$90 000</u> | <u>\$72 000</u> |

Foreign tax credit

| | | |
|------------------------------------|------------------|-----------------|
| 1. Direct credit (withholding tax) | 10 000 | 8 000 |
| 2. Deemed paid credit | 100 000 | 20 000 |
| | <u>\$110 000</u> | <u>\$28 000</u> |

The total actual FTC based on the foreign affiliates' taxes is \$138 000. The overall upper limit of the FTC is:

$$(\$300 000) (\$374 000)/(\$1 100 000) = \$102 000$$

Since the total FTC exceeds the overall upper limit, the latter is applied against the parent's tax.

US parent income

| | |
|-------------------------------|--------------------|
| US source income | \$800 000 |
| Foreign source income: | |
| Country A subsidiary | 200 000 |
| Country B subsidiary | 100 000 |
| Taxable income | <u>\$1 100 000</u> |
| 34% US corporate tax | \$374 000 |
| -FTC (upper limit) | <u>102 000</u> |
| US parent tax liability | <u>272 000</u> |
| After-tax income of US parent | <u>\$828 000</u> |

Assuming that the total FTC is applied, the after-tax income of the US parent would be:

$$\$1\,100\,000 - (\$374\,000 - \$138\,000) = \$864\,000$$

Following is the application of the derived formulas to determine directly the after-tax profit of the US parent and the worldwide profit of the US-based multinational corporation.

In computing the FTC, a comparison must be made between the actual FTC and the upper limit based on the following two expressions:

(1) FTC based on actual foreign taxes, expression (10):

$$\begin{aligned} \sum_{i=2}^3 \pi_i (1 - R_i) [(1 - T_i) T_{wi} + T_i] &= 200\,000 (1)[(.5)(.1)+.5] \\ &+ 200\,000 (.5)[(.8)(.1)+.2] = \$138\,000 \end{aligned}$$

(2) FTC based on the overall upper limit, expression (14):

$$\begin{aligned} \sum_{i=2}^3 \pi_i (1 - R_i) T_1 &= 200\,000 (1)(.34) + 200\,000 (.5)(.34) \\ &= \$102\,000 \end{aligned}$$

Since the latter amount is lower, it is the maximum FTC allowed to determine the after-tax income of the US parent (π_1). Accordingly, π_1 is computed based on expression (25) as follows:

$$\begin{aligned} \pi_1 &= DE(1 - T_1) + \sum_{i=2}^3 \pi_i (1 - R_i) \\ &= 800\,000 (1-.34) + 200\,000 + 200\,000 (.5) = \$828\,000 \end{aligned}$$

Assuming that the actual FTC applies, π_1 is computed based on expression (20) as follows:

$$\begin{aligned} \pi_1 &= DE(1 - T_1) + \sum_{i=2}^3 \{\pi_i (1 - R_i) [1 - (T_1 - T_i - T_{wi}(1 - T_i))]\} \\ &= 800\,000(1-.34) + 200\,000(1)[1-(.34-.5-.1(1-.5))] \\ &+ 200\,000(.5) [1-(.34-.2-.1(1-.2))] = \$864\,000 \end{aligned}$$

Given expressions (20), (25), (26), and (27), the worldwide profit of the US-based multinational corporation is the after-tax income of the US parent, \$828 000 or \$864 000 (depending on the allowable amount of the FTC).

The example shows that the parent's profit function expressed in (20) or (25) considers both the implicit integrated and aggregate impacts of inter-affiliate pricing on the entity's income allocation. This can be explained through expression (25) where its foreign source income is only based on the dividends paid to the US parent from affiliate i 's income or the amount:

$$\sum_{i=2}^3 \pi_i(1 - R_i) = 200\,000 (1) + 200\,000 (.5) = \$300\,000$$

On the other hand, the worldwide profit function expressed in Eq. (27) recognizes the full implicit aggregate impact of inter-affiliate pricing on the multinational company's income. This can be explained through the components of expression (27) where its foreign source income recognizes the whole US income share whether retained in the country B affiliate expressed in Eq. (26), the amount

$$\sum_{i=2}^3 \pi_i R_i (1 - T_i) + 0 + 200\,000 (.5) (1 - .2) = \$80\,000$$

or partially involved in the declared foreign source income of the parents profit function Eq. (25), the amount

$$\sum_{i=2}^3 \pi_i (1 - R_i) = 200\,000 (1) + 200\,000 (.5) = \$300\,000$$

Conclusions

If the foreign subsidiary is wholly owned by the US parent, the firm will have incentives to shift resources into the jurisdiction with the lowest tax rates. Interestingly, the requirement for some local ownership set by various governments can be viewed as a mechanism to create a desirable tension between the parent and the subsidiary. Since reported profit at the subsidiary level now becomes material, a linkage is achieved between profits as shared among the owners and the government.

This paper formulates a model to determine worldwide profit for the parent company and the overall group under varying alternatives. These alternatives include changes in (1) the US income tax rate, (2) foreign tax rates, (3) withholding rates, and (4) the percentage of foreign income dividend to the parent corporation. Managers may use this model to perform sensitivity analysis to determine their profits under different circumstances. For example, the effect of pricing goods to transfer some of the profit to a subsidiary (for both existing as well as for those under expansion policy consideration) in a low-tax country could be easily computed using the model. Management could then weigh the possible costs of such a strategy against the benefits received.

Among some of the possible extensions of this model is to consider the impediment to the achievement of efficiency when production parameters are unknown (Diewert, 1985). In many international operations, ownership in the foreign subsidiary is shared between the parent company and a local partner who possesses information about subsidiary's cost function that is unknown to the parent. However, the local management is entitled to monetary incentives that effectively amount to an analogous form of profit sharing. Under information asymmetry, ownership structure creates an agency problem which interacts with the tax impact. Thus, the design of transfer prices and optimal production decisions may consider both facets of the problem.

Notes

- Often, a government will withhold income tax on dividends paid to foreign entities, to ensure that the income tax will be paid.
- The Internal Revenue Code provides for a deemed paid credit when a domestic corporation owns at least 10 percent of a foreign corporation.
- For foreign corporations that are classified as "not controlled foreign corporations" by the Internal Revenue Code, income is not taxable to the US parent firm until a dividend is declared. For firms that are classified as "controlled corporations," their business income is deferred until declared, but their non-business income must be recognized by the parent when earned, regardless of when a dividend is declared. The tax credit, in this respect, applies to all business and non-business income recognized by the US parent. Income retained by a foreign corporation rather than declared as a dividend would not be included in non-business income.
- Generally, subscript 1 denotes the US parent firm, and subscripts 2, 3, ..., I denote the rest of the affiliates in the system.
- It is assumed that the earnings retention weighted by the percentage of parent ownership in affiliate i .
- The deemed paid credit is computed as follows:

$$\frac{\text{dividends received}}{\text{post-1986 accumulated earnings and profits}} \times \text{foreign income taxes. For the purposes of this paper,}$$

it is assumed that all post-1986 earnings and profits have been distributed.

- As of 1986, the overall limit must be computed for each of eight different types of income.
- Since all the US parent earnings are retained, $(1-R_p) = 1$.
- According to the Internal Revenue Code, if the overall upper limit is lower than the total actual tax credit i.e. Eq. (10) is greater than Eq. (14), the latter is to be applied and the difference can be carried back two years and forward five years.
- Assumed to be weighted by 100%, the percentage of the parent ownership in the subsidiary.

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Book Reviews

Accounting Research Database by *Bimal Prodhān and Fouad Al Najjar*.
Routledge, London, 1989, 247 pp., \$35.00.

This book is perhaps mistitled in that it is not a database that would be used by accountants or accounting researchers but rather the database used by the authors to write a 10-page article on trends in academic publishing. Essentially, this book is nothing more than a 10-page journal article with a long appendix.

The authors analyzed 1277 articles published in four academic accounting journals over the period 1976-1985. The four journals were: *The Accounting Review*, *Journal of Accounting Research*, *Accounting and Business Research*, and *Journal of Business Finance and Accounting*. The first two are published in the United States, while the latter two are published in Great Britain. Articles were divided into 20 subject categories. In addition, each article was classified as being either empirical or conceptual. Among the main conclusions, albeit less than earth shattering, was that the *Journal of Accounting Research* published the highest percentage of empirical articles - a finding that has been often hypothesized. The British Journal, *Accounting and Business Research*, was viewed as the most conceptual of the four publications. All four journals showed an upward trend over the period in the percentage of empirical articles being published. It should be mentioned that the accuracy of the classification with respect to empirical or conceptual is subject to question. This reviewer found some articles that appeared to be classified incorrectly. One instance involved a tax article which appeared to be obviously empirical and which included the word "empirical" in the title, but was classified as conceptual.

Among the 20 topics, auditing was the most popular in the two American Journals, while price-level accounting was the most often published subject in Great Britain. However, when the two British Journals were analyzed separately, history ranked as the number one topic for *Accounting and Business Research*, while corporate finance was the primary topic published in the *Journal of Business Finance and Accounting*. Through a great deal of statistical manipulation involving regression analysis and coefficients of concordance, the authors found that there was an upward trend in the number of auditing articles being published, while price-level accounting articles were on the downturn. Perhaps more important was the list of other topics that were being published less often at the end of the 10-year period than at the beginning. These included budgeting and information systems. To researchers in these subject areas, the declining percentage of acceptances may be of interest.

Several tables attempted to show the various subject areas published by each of the journals, but the tables were of little use due to the lack of explanation of what the codes on the tables meant. It was not until page 181 that the 20 subject categories were listed, yet the categories had been used, by number, on several tables.

Following the short analysis, the next 146 pages were devoted to a listing of the tables of contents of the four journals for the 10 years covered by the study. The final 63 pages categorized the articles by the 20 subject areas. Given the broad nature of the categories, this section was virtually worthless. Each article was assigned to only one topic area even though articles often overlapped categories. If a person were to want a complete table of contents for the four journals for these years, a better source would be the 1992 *Accounting Literature Index*, second edition, authored by Heck, Derstine, and Huefner. Copies of this latter book are available free from McGraw-Hill. The Heck publication includes the tables of contents from 33 journals dating back to 1926 and through 1991. With respect to the categorization by topic, the AICPA publication, *Accountant's Index*, does a far better job and includes many more categories.

In summary, *Accounting Research Database* is not an accounting research database. What little merit the book has is far outweighed by other resources. The first 10 pages attempt to illustrate the difference in publishing trends between the US and British academic accounting journals, but the analysis is limited and offers little in the way of surprises. The remainder of the volume is of no value.

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Sociological Perspectives on Modern Accountancy by Robin Roslender, Routledge, London, 1992, 229 pp.

This book attempts to provide a description of modern accountancy through the lens of a sociologist. The stated purpose is to focus on accountancy as a social institution and to use the framework of sociology to explain its constituent parts. The book does indeed provide a sociological perspective on accountancy. Unfortunately, the content, the perspective offered, and various flaws in the text render it of questionable value to accountants or to those who might be interested in accountancy.

The author uses the introductory chapter to define key sociological terms, discuss accountancy as a social institution, identify the constituent parts of accountancy, and describe the plan of the book.

Sociology is concerned with structure and process, power and power relationships, meaning, and motivation. Institutions in the sociological sense are major components of the social structure. They refer to any broad, patterned, goal-oriented areas of human social life and include groups, roles and norms, social processes, beliefs, practices, etc. Accountancy, according to this framework, can be viewed as an

institution. For example, all societies have some form of political or religious activity which would be part of the political or religious institutions of that society. Accountancy activity, likewise, has structure, process, purpose, and meaning. The author identifies the constituent parts of accountancy as accounting (financial and managerial), auditing, tax, and finance; the practitioners; and accounting organizations.

In each chapter a constituent part of accountancy is examined from various sociological perspectives (e.g., structure, process, role). Chapter 1 uses the framework of the sociology of occupations to examine accountancy as a profession. After a brief review of the characteristics that distinguish an occupation from a profession, the subject shifts to professional accounting associations, professional socialization, and the public image of accountants. The historical information and examples in this and other chapters are drawn primarily from the experience in Great Britain.

Chapter 2 begins with a brief history of public accounting in Great Britain. The text progresses from the structure of the profession to the roles played by professional accountants in public practice, industry and commerce, the public sector, and the accounting technician, who is described as a paraprofessional performing only routine tasks. Chapter 3 examines the social organization of work, and the experiences of accountants in their work environments. Chapter 4 attempts to construct an ideology of accountancy.

The next four chapters describe – again from a sociological perspective – the nature of financial accounting, management accounting, finance, and auditing. These branches of accounting are described in terms of their structure, function, roles, and work experience.

There are several flaws in this book. The detailed descriptions in the various chapters tend to be tedious, there are some contradictory statements, and the text is distractingly peppered with unfounded assumptions or questionable inferences.

In Chapter 2, for example, several pages of text are imbedded with statistics on the current and past membership levels of various accounting associations in Great Britain. This detailed information, which would have been easier to digest if put in tables or charts (or simply referenced with a footnote), is only marginally relevant to the point the author was trying to make. The chapter later gives a lengthy discussion of budgets, variances, and standards. Just when the reader begins to question the relevance of this preponderance of detail, the author gives us the reason: to show that accountants do routine work. Well everybody, from astrophysicists to bus drivers, does routine work. What is insightful about the fact that accountants do also? The point could certainly have been made more concisely.

Several contradictions in this book make for confusing and frustrating reading. The author tells us in the opening sentence that the “subject of this text is modern accountancy, which is to be considered from a sociological perspective.” Later in the introductory chapter, in describing the plan of the text, we are informed that “the present text was never conceived of as simply an attempt to assemble the elements of a sociology of accountancy.” Five sentences later, we are told “... it was clear that the text should have two parts. The first ... a sociology of accountancy ... The second ... a sociology for accountancy.” This has the effect of ping-ponging the reader from one position to the next. Apparently, the final ping held sway: the title of Part I is the “Sociology of Accountancy.”

A more disturbing contradiction concerns the nature of accountancy itself. In Chapter 1 accounting is described as a profession. In Chapter 5 we are told that accounting is a social science: "... few would deny that accounting social science ..." Yet, in Chapter 5 accountants are also compared to plumbers and electricians. What are we to conclude: that accountants are professionals, social scientists, or trades people?

The author tells us in the introductory chapter that the text is "being written for accountants rather than sociologists." If so, what purpose is served by the detailed, elementary descriptions of financial statements in Chapter 2 or the descriptions of auditing and financial accounting and managerial accounting in Chapters 5-8? Surely, accountants more than any other occupational group are familiar with this information. Further, the sociological description of accountancy in Chapters 2-4 would seem to be relevant primarily to students assigned the task of writing a research paper about accountancy or to sociologists seeking an understanding of the accounting profession. But for practicing accountants the information is of questionable value. Finally, on page 211 in the summary chapter, the author addresses sociologists, offering them advice on doing research in accountancy. Why are sociologists addressed in a text written for accountants? After completing the text, it is my impression that while the text may have been intended for accountants, it was, in fact, written for sociologists.

In several instances unfounded inferences or assumptions are made. In describing the eighteenth-century English joint stock company, the text states: "Not surprisingly the early history of the joint stock company was one of scandals and swindles." Why is this "not surprising?" No reason is given.

We are told that the *Corporate Report*, published by the UK Accounting Standards Steering Committee in 1975, "was received with horror by large sections of the accounting profession." While it may be that some segments of the profession vigorously disagreed with the report, "horror" seems a bit extreme. In any event, no sources are cited and the reader is not told why the profession reacted as the author claims.

Chapter 3, on the work experience of accountants, is based on the assumption that accountants experience "unsatisfactory work situations." No source is cited for this negative view of accountants' work. The author cites Marx on alienated labor and Harry Braverman on the degradation of work. But the examples are based on physical laborers, not professional work. This presents no difficulty for the author, who notes that like physical laborers, "the individual accountant simply follows the rules and applies the appropriate formulae." Apparently, the lessons of Chapter 1 where accounting is described as a profession did not carry over to Chapter 3. No distinction is drawn between the routine tasks of a laborer and the judgment or analysis required in the work of a professional accountant. The basis for this rather jaundiced view of accountants' work becomes clear in the summary chapter where we are informed of the author's doctoral work in sociology and interest in "proletarianisation among professional employees."

In sum, it is difficult to see the relevance of this book for modern accountants. The detailed description of the structure of the profession in Great Britain is of marginal value to accountants in other parts of the world; indeed, information of a more

universal nature is readily available in the "Professions" chapter of most "Sociology of Occupations" textbooks. The description of financial statements and the tasks that comprise the work of accountants or auditors are already known by accounting students and practitioners. Finally, it is doubtful if the particular sociological perspective ("proletarianisation among professional employees") through which the author views accountancy will help accountants better understand themselves or their work, or enable them to perform their tasks more effectively.

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1 William A. Dymsza, Multinational Business Strategy (New York: McGraw-Hill, 1972), 49-53.

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International Accounting Practices and Transaction Cost Theory: An Extended Framework

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Key words: Transaction cost theory; Comparative accounting practices; Cultural variables

Abstract: *Transaction cost theory in recent years has been applied to explain differences in the external reporting systems of various countries. In the work reported here, measures for two characteristics of reporting systems, degree of specificity and degree of compliance, are developed using the database of Gray et al. (1984). Thirty countries are ranked according to these dimensions and the qualitative analysis of Pratt and Behr is ratified. The effect of cultural variables on external reporting systems is also investigated and avenues for future research are identified.*

Research to date has failed to explain international accounting differences in terms of theories that link environmental characteristics to reporting regulations and practices. Several studies, while identifying likely approaches to future inquiry, have called for the incorporation of the theory of hierarchies, agency theory, contracting theory, transaction cost theory,¹ and contingency theory² in understanding the differential role of accounting and auditing in various countries. In a seminal paper, Pratt and Behr³ developed a *transaction costs framework* to explain differences in external financial reporting systems of various countries in terms of the costs of transactions in financial or capital markets.

The *Pratt–Behr* (PB) framework suggests that transacting parties or market participants invest in reporting systems in order to induce managers to generate “unbiased” reports. Although such systems reduce transaction costs of operating in

the capital markets, they are expensive. Therefore, market participants attempt to substitute such costs for transaction costs resulting from incomplete and asymmetric information. The PB framework further proposes that the rate of such substitution is affected by certain environmental factors which vary across capital markets. Pratt and Behr also presented a compelling qualitative analysis of "the process underlying the relevancy of environmental variables to efficient transactions in capital markets, with particular emphasis on the role of external reporting systems."⁴

This paper develops in two stages the foundations for empirical testing of the PB framework:⁵ first, two measures, *degree of specificity* (of reporting requirements) and *degree of compliance* (with reporting requirements), are defined and proposed for use as dependent variables in empirical tests of the PB framework. Scores for 30 countries are developed using the Gray et al.⁶ database. The countries are ranked on the basis of degree of specificity and degree of compliance to demonstrate how differences in these dimensions can be explained in terms of the PB framework. Next, the qualitative analysis conducted by PB (involving a comparison of the United States and Switzerland) is ratified using the *degree of specificity* and *degree of compliance* measures.

This paper further proposes inclusion of two measures of national characteristics: *uncertainty avoidance* and *professional accounting culture* as independent variables in future empirical work. While indices of uncertainty avoidance⁷ are readily available, those of professional accounting culture are not;⁸ thus, development of this metric is suggested for application in future empirical work. The analysis reported in this paper suggests that countries with high levels of uncertainty avoidance are characterized by high degrees of specificity (of reporting requirements) and high degrees of compliance (with reporting requirements).

This paper improves on prior studies⁹ using clustering approaches, which have shown only that harmonization of accounting practices may be virtually impossible to achieve and that environmental variables are closely associated with groupings obtained from accounting practices.¹⁰ Clustering approaches have contributed little to the understanding of processes that account for differences in reporting requirements and practices. Within a transaction costs framework, two types of investigations can be performed. First, as shown by PB, a detailed, qualitative analysis of a few countries can yield insights into such processes. Second, empirical analysis that is broader in scope and more amenable to generalization can be attempted.¹¹ The objective of this paper is to lay the foundations for both types of investigations. The dual measures of specificity and compliance in conjunction with other environmental variables can aid qualitative research by (a) using the rankings presented in this paper as a benchmark for *ex-post* discussion following qualitative analysis,¹² and (b), using the rankings *ex-ante* to select countries for detailed comparisons. For example, examining countries that are polarized along the dimensions of specificity and compliance may yield valuable insights.

The paper does not intend to suggest that broader, generalizable empirical approaches are superior to small-sample qualitative comparisons. The issue of diversity in international reporting requirements and practices can be most rewardingly investigated by adopting a coordinated research strategy that uses both types of methodologies.¹³

The Pratt–Behr Framework¹⁴

The Framework and Variables

Typically, a capital transaction involves: (1) search costs of locating opportunities; (2) bargaining and decision costs incurred during negotiation; and (3) policing and enforcement costs. At each stage, information asymmetry between parties adds to the transaction cost.

Capital market participants can be classified into three types: owners, managers, and auditors. Owners, while providing capital to managers, incur costs of seeking trading opportunities, bargaining, and enforcement. At each stage, the owner is handicapped by the informational advantage enjoyed by the manager. All these add up to the transaction costs incurred by the owner. Transaction costs can be reduced by placing constraints on the managers' reporting behavior in the form of an external reporting system or by promoting voluntary disclosure.¹⁵ This system includes the standard-setting process, mechanisms to ensure audit quality and independence, and the legal system that governs enforcement of contracts. Since the reporting system reduces transaction costs, market participants have incentives to invest in an external reporting system. Pratt and Behr developed the following model of the process:

Let TC = total costs; T = transaction costs; R = reporting system costs

Now assume that

$$TC = T + R$$

Since T is a function of R , $T(R)$ can be substituted for T , leading to

$$TC = T(R) + R$$

Assume further that the transaction cost function is twice differentiable with the second derivative being positive. That is:

$$T'(R) < 0$$

$$T''(R) > 0$$

The assumption of negative slope of the transaction cost function is employed since investments in reporting systems serve to reduce transaction costs. The second assumption, that the slope of the transaction cost function increases at a decreasing rate ($T''(R) > 0$), denotes that "each additional dollar investment in the reporting system reduces transaction costs by a decreasing amount". Within such a framework, the objective of rational market participants will be to "choose R such that $T(R) + R$ is minimized". This "is achieved at the point where the slope of the $T(R)$ function is equal to -1 ". In other words, TC is minimized "at the point where a \$1 investment in the reporting system reduces transaction costs by exactly \$1". This relationship and the process that gives rise to the choice of R^* , the optimal investment in an external reporting system, is illustrated in Exhibit 1.

PB further argued that "environmental factors can determine (1) the distance from the origin of the $T(R)$ function or (2) the rate of change in the slope of the $T(R)$ function. Either effect has a bearing on the optimal investment in an external reporting

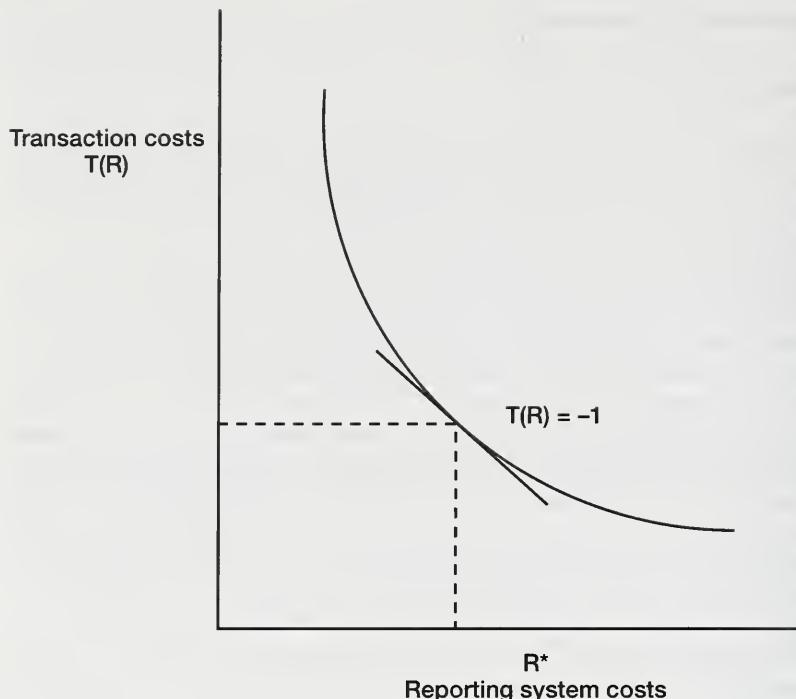


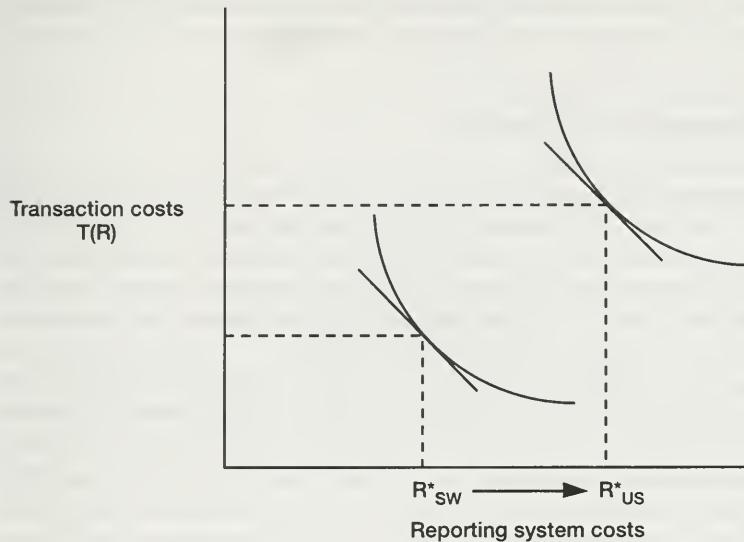
Exhibit 1. Optimal investment in an external reporting system. Source: Jamie Pratt and Giorgio Behr, "Environmental Factors, Transactions Cost, and External Reporting: A Cross-National Comparison." *International Journal of Accounting* (Spring 1987).

system (R^*)". This is illustrated in Exhibit 2. "As the $T(R)$ function moves away from the origin, the optimal investment in an external reporting system becomes greater" (Exhibit 2a). As the rate of change in the slope of the $T(R)$ function decreases, the optimal investment in an external reporting system increases (Exhibit 2b).

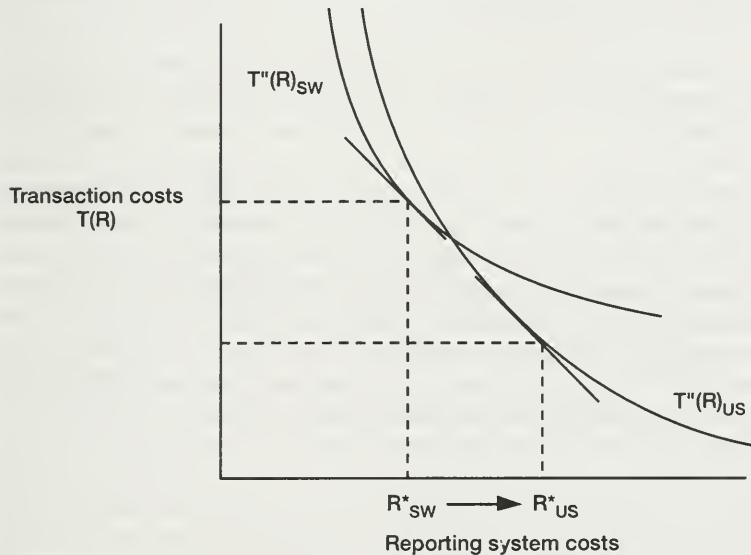
PB used the transaction costs framework to develop relationships between investment in external reporting systems and the following environmental factors: (1) capital market size, complexity and distribution of ownership; (2) the owner–manager ratio; and (3) differences in culture. Using the transaction costs framework, PB concluded that: (1) as the size, complexity and distribution of ownership in capital markets increases, reporting systems cost increases; (2) in cases where the owner–manager ratio is high, a larger investment in the reporting system is needed; and (3) capital markets composed of opportunistic participants require greater investments in reporting systems.

PB used the transaction costs model to explain why the US external reporting system is much more extensive and costly than the Swiss system. Specifically, they argued that "the $T(R)$ function in the United States is farther from the origin than that in Switzerland", and that the slope of the US $T(R)$ function increases at a slower rate than the slope of the Swiss $T(R)$ function. Employing a qualitative analysis, they explained the existence of "extensive and costly" controls in the United States

(a) $T(R)$ function moves away from the origin:



(b) Slope of $T(R)$ function changes at different rates:



sw = Switzerland

us = United States

Exhibit 2. Effects of environmental factors on optimal reporting system costs. Source: Jamie Pratt and Giorgio Behr, "Environmental Factors, Transactions Cost, and External Reporting: A Cross-National Comparison." *International Journal of Accounting* (Spring 1987).

as opposed to the “poorly specified reporting standards” in Switzerland. Finally, they called for empirical tests of their framework by relating environmental variables (across countries) to external reporting system characteristics.

Proposed Dependent Variables

In order to attempt empirical tests, one must first identify the dependent variables of interest. From the analysis presented so far, *cost of external reporting systems* was the first choice but was rejected because of inherent measurement problems. In addition to cost, PB also described characteristics, such as *extensive* nature of controls in the United States and *poorly specified* reporting standards in Switzerland. Therefore, *degree of specificity* was chosen as a dependent variable.

Degree of specificity (DOS) is defined as the extent to which accounting concepts and policies are clearly specified through the standard-setting process. Therefore, countries with a high degree of specificity would have more extensive reporting systems while those with a low degree of specificity would have poorly specified reporting standards. In addition, DOS was chosen as a proxy for the cost of reporting systems because countries with a high degree of specificity would incur more costs in the standard-setting process in the creation, implementation, and maintenance of such extensive reporting systems.

The variable DOS is an imperfect proxy for the cost of external reporting systems. Transaction costs can be reduced through: (1) the standard-setting process; (2) mechanisms to ensure audit quality and independence; and (3) the legal system that governs enforcement of contracts. DOS at best measures the first dimension, that is, the standard-setting process.

Degree of compliance (DOC) was chosen as the second dependent variable of interest and is defined as the extent to which specified accounting concepts and policies are actually followed in practice. This variable is also a proxy for other components of the external reporting system such as audit quality and independence and the legal system. Countries with greater investments in ensuring audit quality and a legal system for enforcement of contracts would have a high degree of compliance. Therefore, DOS and DOC were considered as dependent variables that together represented costs and extensiveness of external reporting systems.

Additional Variables

There are two additional variables which determine transaction costs or investments in external reporting systems or both. The first is *uncertainty avoidance* (UA), which relates to differences in culture. PB stated that market participants in different cultures would differ systematically in their values and attitudes towards transactions, contracts, and expected behavior of other parties to the exchange. Hofstede¹⁶ defined UA as “the level of anxiety within members of a society in the face of structured or ambiguous situations – expressed in aggression and emotion in institutions promoting conformity. Fundamentally, UA represents a society’s intolerance for ambiguity”. According to Hofstede,¹⁷ “strong UA countries will have accounting

systems that are more detailed and theoretically based. In weak UA countries, systems will be more pragmatic, ad hoc and folkloristic". Hofstede's analysis suggests that strong UA countries will have a high degree of specificity in external reporting systems. In terms of the transaction cost framework, market participants in low UA countries will perceive a relatively smaller threat from information asymmetries. Transaction costs can be reduced to an acceptable level by a relatively small investment in external reporting systems. On the other hand, market participants in strong UA countries will perceive a larger threat from information asymmetries and will require a larger investment in reporting systems.

Professional accounting culture (PAC) is another determinant of transaction costs and investment in external reporting systems. This follows Thomas¹⁸ concept of professional accounting subculture as "the extent to which accounting reports serve as several elements of culture, such as symbol, language, ideology, ritual, and myth". His framework suggested that "companies with a strong professional accounting subculture tend to adopt "proper" or "conventional" measurement practices, disclose more information and utilize innovative reporting techniques". The PAC of a country is defined as the extent to which the accounting profession has a role in the standard-setting process. Countries with a strong PAC would have a well-established accounting profession, high professional membership, moral codes of conduct and greater responsibility, and a fairly strong role in the standard-setting process. Such countries will tend to adopt "proper" measurement practices since they will want to use accounting practices as the elements of culture listed above:¹⁹ as a *symbol*, the use of proper practices would allow countries to demonstrate "legitimate" choices; as a *language*, "adoption of "conventional" practices would allow creation of shared meanings and values", and would act as a means of achieving consensus among market participants. Adoption of proper measurement practices also enhances the ideological and ritualistic roles of accounting. Countries adopting proper measures "claim conformity with the "best" accounting principles and hence enhance their ideological role". Such measures also tend to absorb uncertainty by producing information that is conventionally accepted as accurate and hence involves use of accounting practices as a ritual.²⁰ Finally, use of "proper measurement practices functions as a *myth* by providing institutionalized accounts of prior events despite their arbitrary nature".

The PAC of a country will have a bearing on DOS in that countries with strong PACs will tend to have external reporting systems that are more specific in terms of treatment of issues that are debatable or controversial.²¹ Therefore, it is proposed that countries with strong PACs will tend to have accounting systems characterized by high degree of specificity.

In terms of the PB transaction costs framework, it is difficult to predict the impact of PAC on investment in external reporting systems. This is because the effect of a strong PAC can be interpreted in two ways. First, it may result in lower transaction costs as market participants will perceive a smaller threat from information asymmetries. This would result in a smaller investment in external reporting systems. Conversely, market participants can perceive the accounting profession as a *component* of the external reporting system. If so, a strong PAC can be an indicator of a larger investment in reporting systems. The accounting system can therefore be viewed

either as given, or as an environmental variable. This is an issue that needs to be addressed by future research.²²

The Expanded Framework

The expanded transaction costs framework is presented in Exhibit 3. Transaction costs are composed of four basic costs: (1) seeking opportunities; (2) bargaining; (3) policing and enforcement; and (4) information asymmetry. Transaction costs can be reduced by investment in an external reporting system that comprises: (1) a standard-setting process; (2) mechanisms to ensure audit quality and independence; and (3) the legal system. The transaction costs framework suggests that market participants (owners, managers, and auditors) substitute the transaction costs for investments in the external reporting systems. Several environmental and cultural factors affect the *rate of substitution* and the investment in reporting systems. These are: (1) size, complexity and distribution of ownership in capital markets; (2) the owner–manager ratio; (3) opportunism; (4) uncertainty avoidance; and (5) professional accounting culture. DOS and DOC are the two measures of characteristics of external reporting systems.

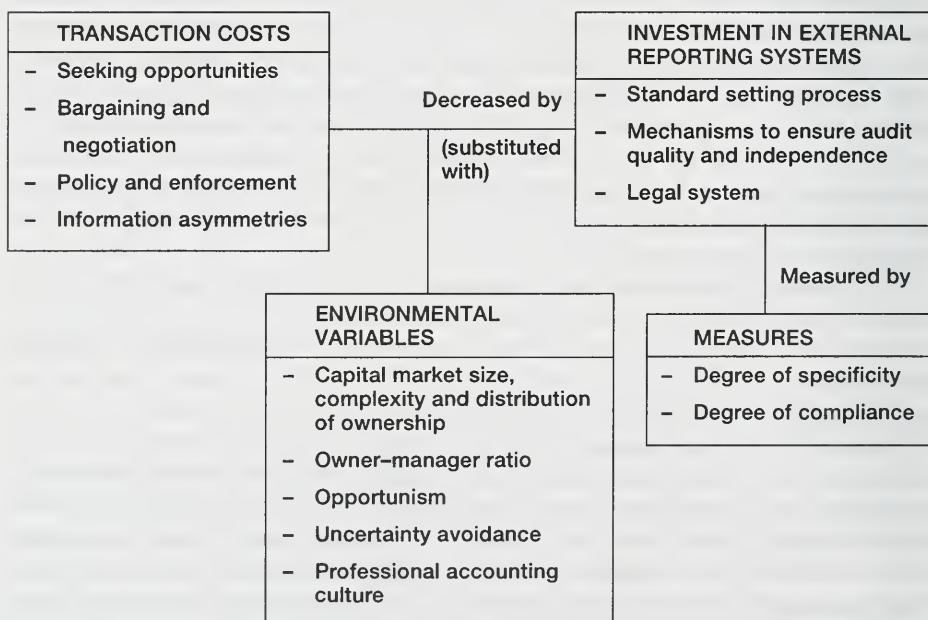


Exhibit 3. An extended transaction costs framework.

Research Method

Country Rankings

The data used to develop the measures were taken from the survey results reported by Gray et al.²³ This source was chosen because it contained fairly comprehensive data on a sample of 30 countries across various continents. Further, their survey included actual accounting practices as well as reporting requirements which has allowed the development of both DOS and DOC measures.

The DOS score for each country was constructed by averaging the scores for each accounting concept. The Gray et al. survey reported requirements and practices pertaining to 428 accounting issues. The survey findings were reported using the following classification: (1) accounting concepts and policies; (2) income and asset measurement; (3) funds statements; (4) group accounts; (5) inflation accounting; (6) foreign currency translation; (7) segmental reporting; (8) forecasts, contingencies and post-balance sheet events; (9) social reporting; and (10) interim reporting. The analysis in this paper is based on items 1–6, which were chosen for two reasons. First, items 1–6 are representative of the most important and relevant issues in external financial reporting across the globe. Second, an examination of the survey findings revealed very little variation across countries in the last four items. A list of the 30 countries and the codes used is presented in Exhibit 4.

Items 1–6 covered a total of 261 accounting issues from which the measures of specificity and compliance for each country were constructed. The DOS score for each country was constructed by adding the scores for each accounting concept and then averaging them. Therefore, $DOS = 1/n \sum a_{i,j}$, where i represents each accounting concept, j represents each country, and $n = 261$.

Scores for each accounting concept were assigned as follows: required = 1; recommended = 2; permitted = 3; and not permitted = 4. Every item was scored on the above Likert scale and then aggregated to compute the total country score. This was then divided by the number of items to obtain the mean score. The mean score

| | | | |
|-----|----------------|-----|----------------|
| ARG | Argentina | JAP | Japan |
| AUS | Australia | MAL | Malaysia |
| BEL | Belgium | MEX | Mexico |
| BRA | Brazil | NZD | New Zealand |
| CNI | Channel Island | PHI | Philippines |
| CHI | Chile | POR | Portugal |
| COL | Colombia | SAF | South Africa |
| DEN | Denmark | SPA | Spain |
| FIN | Finland | SWD | Switzerland |
| FRA | France | THA | Thailand |
| GER | Germany | UK | United Kingdom |
| HKG | Hong Kong | USA | United States |
| IND | Indonesia | URU | Uruguay |
| IRE | Ireland | ZAM | Zambia |
| ITA | Italy | ZIM | Zimbabwe |

Exhibit 4. List of countries and codes.

represented the DOS for each country. This score was further decomposed into category mean scores for each of the six classifications used by Gray et al. Therefore, country DOS scores were developed for the categories of accounting concepts and policies, income and asset measurement, funds statement, group accounts, inflation accounting and foreign currency translation.

The DOC measure was constructed using a similar method. The accounting practice responses were scored as follows: majority practice = 7; neither majority nor minority practice = 6; minority practice = 7; question not applicable = 8; none of the countries used that practice = 9. These scores were added to arrive at the total country score. This was then divided by the number of items to obtain mean country scores. The DOC score was computed as follows: $DOC = 1/n E(a_{i,j} - b_{i,j})$, where $a_{i,j}$ represents requirement (specificity) score of country j for accounting concept i , $b_{i,j}$ represents current practice score of country j for accounting concept i , and $n = 261$.

Analysis

Two sets of comparative rankings of the 30 countries were constructed from the DOS and DOC measures (see Exhibits 5 and 6). The exhibits were constructed to help verify PB's qualitative comparison of the United States and Switzerland and guide future empirical and qualitative research. Exhibit 5, which presents the rankings of 30 countries based on overall DOS and DOC scores, verifies PB's qualitative analysis in terms of a United States versus Switzerland comparison. Consistent with PB's analysis, the United States and Switzerland are seen to differ widely in their DOS ranks. The United States is ranked second while Switzerland is ranked 30th. This finding also establishes the validity of the DOS measure as a proxy for investment in reporting systems.²⁴ Exhibit 5 illustrates the accuracy of another implication of the transaction costs framework. PB argued that it is optimal for the United States to invest more in external reporting systems given its environment. The idea of optimality suggests that, given different environments in the United States and Switzerland, the results of differential investments in external reporting systems will be roughly equivalent.²⁵ If the different levels of investment (in reporting systems) of the two countries are optimal, the two countries will then have similar levels of compliance. External reporting systems are composed of standard-setting processes, auditors and the legal system. Different levels of transaction costs, given different environments and reporting systems, should yield similar levels of compliance if the investment has indeed been optimal. PB have argued that it is optimal for the United States to invest more in reporting systems, as it is for Switzerland to invest less. This is supported by the DOC rankings shown in the right-hand column of Exhibit 5. The United States and Switzerland are grouped closely together, being ranked third and fifth respectively. On the basis of the foregoing analysis, it is concluded that the rankings in terms of the two measures support PB's qualitative analysis and the general implications of the transaction costs framework.

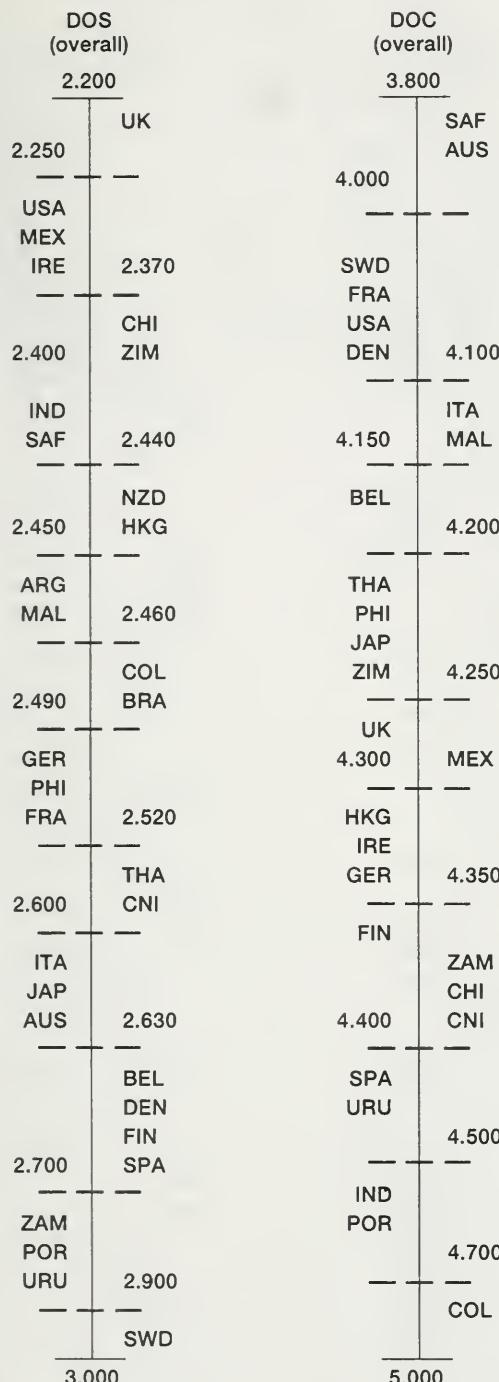


Exhibit 5. Rankings based on overall degree of specificity (DOS) and overall degree of compliance (DOC).

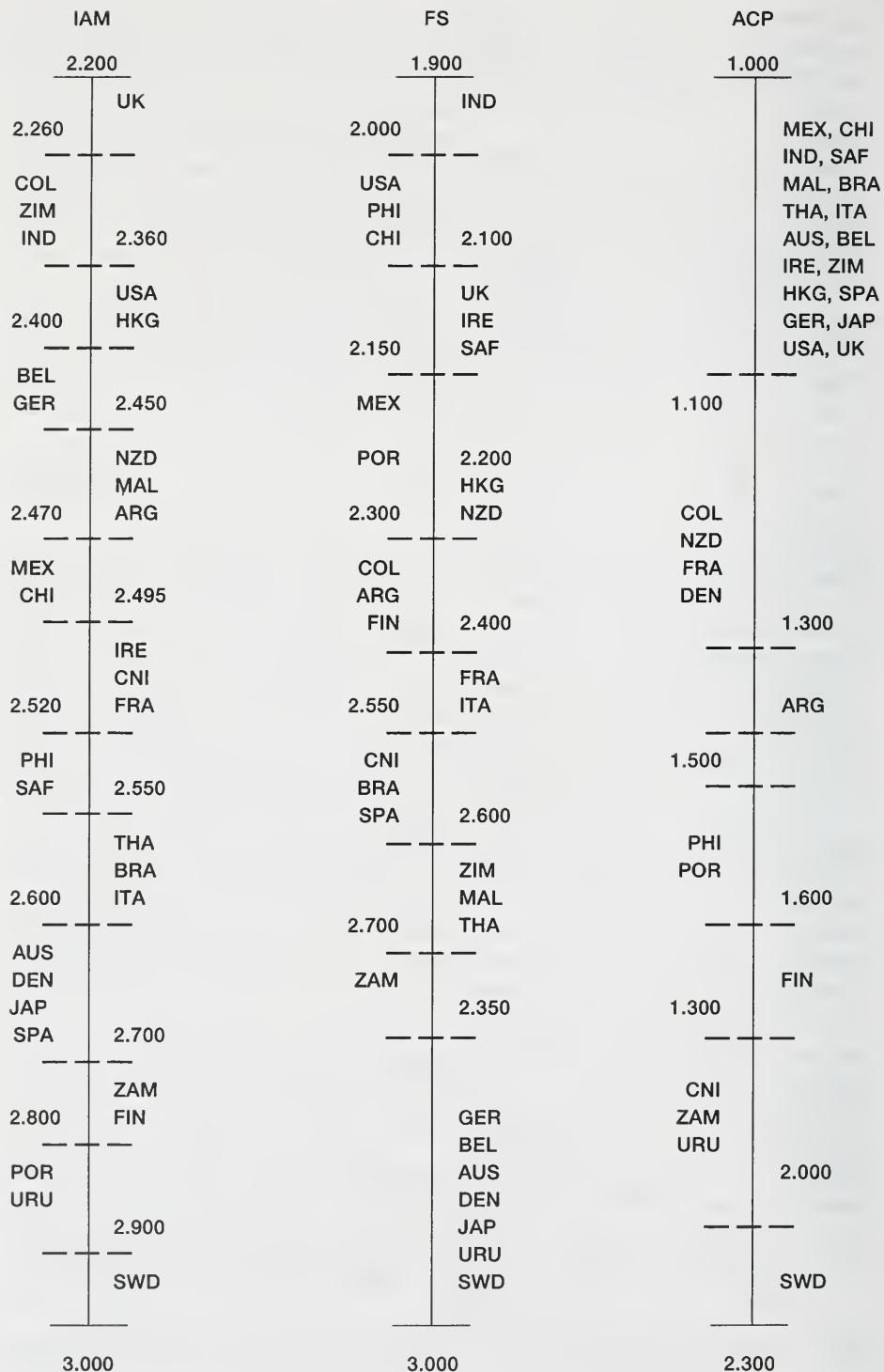


Exhibit 6. The degree of specificity (DOS) scores for the six accounting categories.

| | |
|-----|----------------------------------|
| IAM | Income and asset measurement |
| FS | Funds statement |
| ACP | Accounting concepts and policies |
| GA | Group accounts |
| IA | Inflation accounting |
| FCT | Foreign currency translation |

Exhibit 6. continued

The foregoing discussion points to several interesting avenues of future research. The DOS rankings of Exhibit 5 can be used to select countries for in-depth qualitative analysis. In the context of a united Europe, it may be informative to compare the United Kingdom (ranked first) with countries such as France, Italy, Belgium, Denmark, Spain, and Portugal, which are all ranked below 15th. Comparisons could also be made between top-ranked countries and countries with lower ranks. Finally, comparisons could be made within top-ranked and lower-ranked countries. For example, Switzerland, Uruguay, and Portugal, the countries with the lowest DOS scores, could be compared using qualitative analysis. The similar rankings of these countries could be a result of completely different environmental factors and processes. Such a qualitative analysis may yield insights into other factors such as uncertainty avoidance and professional accounting culture or identify new influences. Finally, the DOS and DOC measures can be used in future empirical work that could also include the other environmental factors listed in Exhibit 3.

The overall DOS rankings in Exhibit 5 can be used to formulate research strategies. The present paper proposes that the degree of compliance is a measure of the effectiveness (optimality) of the investment in reporting systems.²⁶ A comparison of high- and low-ranked countries will verify if this is indeed so. For example, a comparison of Switzerland, France, and Denmark with Indonesia, Portugal, and Columbia may show if there are indeed differences in the effectiveness of reporting systems and if additional investments are required in countries with low DOC ranks. Such an analysis would establish the validity of the DOC measure and identify countries that have a mismatch or “lack of fit” between environmental factors and the investment in reporting systems. In addition, comparisons may be conducted *within* high- and low-ranked countries to evaluate the effects of different *components* of the reporting system. For example, Australia, Switzerland, France, the United States, and Denmark all have high DOC ranks, which may be a result of completely different processes. Future research should analyze how environmental factors interact with components such as standard-setting process, audit quality-ensuring mechanisms, and the legal system to cause this effect.

Exhibit 6 presents a detailed breakdown of the overall DOS score into six categories: (1) accounting concepts and policies; (2) income and asset measurement; (3) funds statement; (4) group accounts; (5) inflation accounting; and (6) foreign currency translation. These scores can be used for future research into specific accounting issues. Across and within-group comparisons in terms of specific issues such as inflation accounting or foreign currency translation can provide insights into the role of environmental variables in the process that determines investment in external reporting systems.

The rankings in Exhibit 6 also demonstrate that the United States and Switzerland are sharply differentiated with respect to specific issues. In general, there is a great degree of similarity with respect to general accounting concepts and principles, with the first 18 countries sharing the same score. In the category of inflation accounting and foreign currency translation, a majority of the countries are grouped at the lower end of the scale. The largest variation in DOS scores is found in the categories of income and asset measurement, fund statements, and group accounts. The rankings

| UA | DOS | DOC |
|-----|-------|--------|
| UA | 0.441 | 0.374 |
| DOS | - | -0.001 |

UA **Uncertainty avoidance**
 DOS **Degree of specificity**
 DOC **Degree of compliance**

Exhibit 7. Correlation matrix for uncertainty avoidance, degree of specificity and degree of compliance.

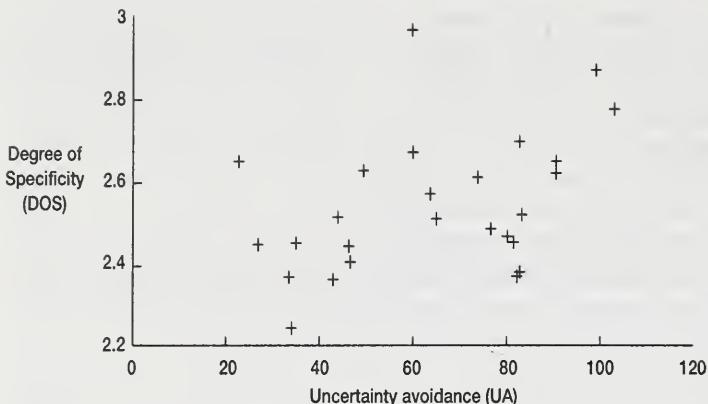
can be carefully analyzed to select groups for future research that can attempt to test the expanded transactions cost framework presented in Exhibit 3.

Effect of Culture

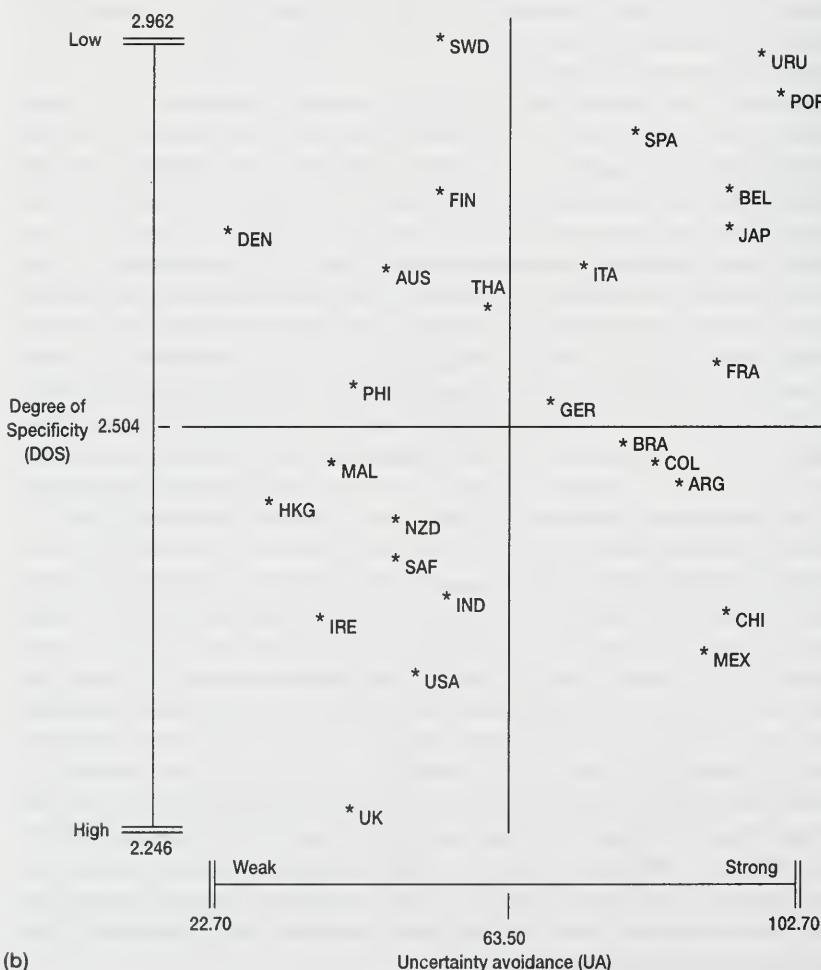
As proposed earlier, it is expected that strong UA countries will tend to have accounting systems that are more detailed and theoretically based. Strong UA countries will therefore tend to have reporting systems characterized by a high degree of specificity. This expectation gave rise to the proposition that country scores of UA will be positively associated with DOS scores.

An analysis was conducted to test this proposition for a sample of 27 countries. First, correlations were computed to test for the relationship between UA and DOS. UA scores were obtained from the results of Hofstede,²⁷ who included 27 of the 30 countries investigated in this research study. For the sample of 27 countries, UA was positively correlated (correlation coefficient 0.413; significant at the 0.05 level) with the DOS. Next, correlations were run on a smaller sample between UA DOS, and DOC (see Exhibit 7). A smaller sample of 24 firms was chosen for this purpose because the degree of compliance scores could not be computed for three countries. The correlations reported in Exhibit 7 show once again that UA is positively associated with DOS, with the correlation coefficient being 0.441. In addition, UA is seen to be positively correlated with DOC, the correlation coefficient being 0.374 in this case.

In addition, two plots were created in order to search for any systematic relationships between the UA and DOS variables. Exhibit 8(a), a plot of UA against DOS scores shows that no clear patterns can be identified. It was concluded that although UA is positively associated with DOS, it is at best only one of several contributing factors. This is consistent with the relationships summarized in Exhibit 3. Exhibit 8(b) presents the same data along the two axes of UA and DOS, thus mapping the 27 countries into four quadrants: (1) strong UA–high DOS; (2) strong UA– low DOS; (3) weak UA–low DOS; and (4) weak UA–high DOS. The median scores of UA and DOS were used to categorize the variables in terms of high–low DOS and strong–weak UA. Accordingly, the hypothesized relationship between UA and DOS holds for countries mapped into quadrants 1 and 3. While the present paper does not propose to develop “clusters”, these groups can be used in future research exploring the role of cultural variables. A number of important comparisons can be undertaken. For example, countries in quadrants 1 and 3 can be compared with the countries in quadrants 2 and 4. In addition, countries having similar UA scores but different DOS scores (3 and 4; 2 and 1) may be compared in order to isolate the role of other cultural variables such as opportunism.



(a)



(b)

Exhibit 8. (a) Relationship between uncertainty avoidance and degree of specificity. (b) Categorization of 30 countries based on uncertainty avoidance and degree of specificity.

Summary

In essence, this paper has demonstrated that the transaction cost framework is a viable conceptual model that can be used to understand the processes that give rise to different accounting systems around the world. DOS was proposed as a measure of the investment in reporting systems, while DOC was presented as a measure of the effectiveness of the level of investment. Using country rankings in terms of these variables, support was found for Pratt and Behr's (1987) qualitative analysis of reporting systems in Switzerland and the United States. The transaction costs framework was expanded by the inclusion of the variables UA and PAC. Support was also found for the proposition that uncertainty avoidance (UA) would be positively associated with the degree of specificity (DOS). Responding to PB's call for empirical and qualitative research, the present paper provides some of the foundations by developing and validating the measures of specificity and compliance. These measures can be used to formulate research strategies that will lead to a better understanding of processes that give rise to different accounting systems.

Limitations and Future Research

Because this paper has relied greatly on the framework developed by PB, it carries with it the limitations of the transaction costs framework. The major limitation is that the framework fails to capture the dynamic nature of the relationships among the variables. More recently, the transaction cost theory has been criticized on the grounds that it neglects the role of the "invisible hand" of the market mechanism in eliminating market participants who are habitually opportunistic.²⁸ A specific limitation of the paper is that the measures developed have not been rigorously validated. However, the motivation for developing the measures was the need to conduct both qualitative and empirical studies to better understand the processes that account for accounting system differences around the world. A rigorous validation of these measures would be possible with data on the actual costs of creating, implementing, and maintaining external reporting systems.

A number of research possibilities have been discussed. It has been demonstrated that the rankings presented here can be used to select countries for qualitative analysis. While PB called for such comparisons, this paper has attempted to make the process more efficient by providing "road maps" in the form of country rankings along two important dimensions. It has also attempted to aid empirical work by developing two measures that may be used as dependent variables. A fruitful direction of research would be to validate measures of the independent variables outlined in this paper, together with country-specific economic measures. In addition, the measure of compliance will help studies that try to assess effectiveness of reporting systems and that examine if low compliance results from a "lack of fit" between environmental variables and reporting system characteristics. Another avenue of research would be the development of the (PAC) variable to examine the role of the accounting profession in the determination of external reporting systems. Finally, analytic work deriving comparative statics results is needed to provide alternative theoretical models of the

dynamic relationships between the variables that determine optimal investment in reporting systems. Progress in this area will have to be made through coordinated research strategies that use both quantitative and qualitative methods.

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2. J.A. Schweikart, "Contingency Theory as a Framework for Research in International Accounting." *International Journal of Accounting* (Vol. 21, No. 1, 1987), 89-98.
3. J. Pratt and G. Behr, "Environmental Factors, Transaction Costs, and External Reporting: A Cross-National Comparison." *International Journal of Accounting* (Spring 1987), 1-24.
4. J. Pratt and G. Behr, p. 3.
5. According to Pratt and Behr, an empirical test of their framework "would consist of comparing measures of environmental variables across a number of countries and relating them to characteristics of domestic external reporting systems" (p. 23).
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8. For an illustrative application of the concept of professional accounting sub-cultures (PASC) within firms, see A.P. Thomas, "The Effects of Organizational Culture on Choices of Accounting Methods." *Accounting and Business Research* (Vol. 19, 1989), 363-378.
9. S.J. Gray, "International Accounting: A Review of Academic Research in the United Kingdom." *International Journal of Accounting*. (Vol. 19, 1983 No. 1), 15-42.
10. See for example, H.M. Abu-Jbarah, "A Subentity Basis for Financial Reporting by Multinational Firms: A Cluster Analysis Approach." Unpublished Ph.D. Dissertation (University of Wisconsin, 1972); R. Da Costa, J. Bourgeois and W. Lawson, "A Classification of International Financial Accounting Practices." *International Journal of Accounting* (Spring 1978), 73-85; W. Frank, "An Empirical Analysis of International Accounting Practices." *Journal of Accounting Research* (Autumn 1979), 593-605; R. Nair and W. Frank, "The Impact of Disclosure and Measurement Practices on International Accounting Classifications." *Accounting Review* (July 1980), 426-450; and C. Nobes, "A Judgmental International Classification of Financial Reporting Practices." *Journal of Business, Finance and Accounting*, (Vol.10, No. 1, 1983), 1-19.
11. This discussion is based on Pratt and Behr's analysis, see p. 3.
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14. The discussion in this section is adapted from Pratt and Behr; see pp. 4-13.
15. S.J. Gray, L.H. Radebaugh and C.B. Roberts, "International Perceptions of Cost Constraints on Voluntary Information Disclosures: A Comparative Study of U.K and US Multinational." *Journal of International Business Studies* (Vol. 21, No.4, 1991), 597-622.
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17. G. Hofstede, "The Cultural Context of Accounting." in B.E. Cushing (ed.), *Accounting and Culture* (Sarasota, FL: American Accounting Association, 1987), 1-11.
18. A.P. Thomas, "The Effects of Organizational Culture on Choices of Accounting Methods." *Accounting and Business Research* (Vol. 19, 1989), 363-378.
19. The discussion here closely follows Thomas, pp. 368-369.
20. Thomas notes that the use of proper measurement practices is also more defensible, especially in situations of economic conflict.
21. Thomas, through the development of six hypotheses, provides a partial listing of such issues: expensing research and development expenditure, treatment of goodwill, LIFO-FIFO adoption, incorporation of impact of price changes, incorporation of statement of value added, and distribution of employee reports.
22. Pratt and Behr, in their discussion of the legal system, echo the same sentiment.

23. S.J. Gray, L.G. Campbell, and J.C. Shaw, *International Financial Reporting: A Comparative International Survey of Accounting Requirements and Practices in 30 Countries* (New York: St. Martins Press, 1984).
24. The term "validity" is used here in a weak sense. The intent is not to imply "statistical validity" but to provide some evidence about the appropriateness and usefulness of the measure.
25. The equivalence follows from the notion of optimality; that is, investing a low amount is optimal for Switzerland while investing a high amount is optimal for the United States. The moot point here is that *both* actions are optimal.
26. In this context, the contingency framework proposed by Schweikert (see note 2) can be extremely useful.
27. G. Hofstede, *Culture's Consequences: International Differences in Work-Related Values* (Beverly Hills, CA: Sage Publications, 1980).
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Multinational External Audit Planning

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Key words: Audit guidance; Audit scope; Multinational; Planning; Risk factors

Abstract: *Multinational companies control vast resources and may present the auditor with many new challenges. Little research has explored the auditing of such companies. Experts rated the importance of 34 risk factors in the multinational audit scope decision (which client locations to visit). Key factors include unusual transactions, subsidiary size, and client expectations. The audit manuals of the Big Six firms were reviewed to determine the extent of the firms' guidance for planning multinational audits. The guidance varies widely across firms. Finally, the experts were interviewed regarding several aspects of multinational audit planning.*

Over the last two decades, US businesses have rapidly expanded their operations into overseas markets, and multinational corporations have emerged as a powerful force in the world economy. The world's 600 largest multinational firms, each with revenues in excess of \$1 billion, account for "a fifth of the total [worldwide] value added in manufacturing and agriculture".¹ The top 100 multinationals have a combined market value in excess of \$2.5 trillion.²

Considering the vast resources controlled by multinational firms, the need for effective auditing of these entities clear. The trend toward multinational corporations can create significant new challenges for the auditor because the complexity and the nature of risks faced on multinational audits can be quite different from the domestic audit setting.³ For example, multinational auditors may face the following types of accounting and auditing issues not found on domestic engagements:

uncollectible foreign receivables;

losses due to political action overseas, including expropriation of company assets by a foreign government;

restructuring charges related to foreign operations;

contingent liabilities arising from guarantees of the obligations of foreign customers; foreign currency translation and risks associated with hedging transactions;

complex international investment and joint venture arrangements; complex international tax issues.

Other multinational complexities can include international cash management, international letters of credit, insurance problems, and foreign trade zones.⁴

Despite the richness of the multinational setting, little research has investigated the unique nature of multinational auditing or the methods used by the Big Six firms to maintain their audit quality on such complex engagements. Reasons for the lack of international auditing research include the high cost of obtaining data, the difficulty in obtaining data of sufficient quality to allow publication in the leading journals, and language and cultural barriers.⁵

The purpose of this study is to begin to explore the planning of multinational external audits. Specifically, the paper addresses (1) the factors auditors consider when setting the scope of multinational audits (i.e., which client locations to visit and what level of procedures to perform), (2) the extent of multinational audit scope guidance in place at the Big Six firms, and (3) Big Six auditors' views of the multinational audit planning process.

Experts from the Big Six firms were surveyed and asked to rate the importance of 34 risk factors in their multinational audit scope decisions. The risk factors were derived from discussions with multinational auditors, review of the firms' guidance, and review of the multinational internal audit literature. Firm documentation was examined to assess the extent of multinational audit scope guidance in place at each firm. Finally, multinational auditing experts from each of the Big Six firms were interviewed regarding the multinational audit planning process.

The primary results of the study are as follows. First, the factors considered most important in multinational audit scope decisions are significant or unusual transactions at the subsidiary, subsidiary size, client and audit committee expectations, and subsidiary financial performance (changes in net income or violations of debt covenants). The ratings in the present study differ greatly from a similar study done on international internal auditors.⁶ Also, the factors do not seem to reflect the unique risks faced on multinational engagements. The risks unique to multinational companies were rated quite low in importance. Second, the extent of multinational audit scope guidance varies widely across firms. Two firms have little or no guidance related to multinational audit issues, two firms have moderate guidance, and two firms have extensive guidance on multinational audit risk factors and levels of audit procedures. Third, auditors perceive multinational auditing to be quite different from domestic auditing. Multinational audits involve a longer list of risk factors and much judgment in evaluating the factors. Due to the heterogeneity of client locations, random sampling of locations and projection of errors to other client locations are rare.

Multinational Audit Scope Decisions: Key Risk Factors

The auditor of a multinational company must decide each year which client locations will be visited as part of the audit of the consolidated company and what level of

procedures will be applied at each location. With some companies operating in over 100 countries, this scope decision can become extremely complex.

To develop a list of risk factors potentially relevant to the multinational audit scope decision, three sources were consulted. First, eight Big Six multinational auditors (one or more from each firm) were asked to list the factors they consider when determining the audit scope on a multinational engagement.⁷ Second, the Big Six firms' audit manuals were reviewed for lists of multinational audit risk factors. Finally, Okopny and Strawser⁶ studied the factors most important to multinational *internal* auditors in their planning process. Okopny and Strawser's factors were based on a review of 16 descriptive articles on international internal auditing. Factors listed in their study that appeared relevant to external auditing also were included. Based on this process, 34 factors were identified.

To determine the relative importance of the 34 factors, seven multinational auditing experts, as designated by the Big Six firms, rated the factors. The survey was sent to 10 experts and returned by seven of them. The seven respondents represent four of the Big Six firms. Some of these experts also participated in developing the list of potential factors; however, the time lag between the development of the list and the rating of the factors was several months. As shown in Table 1, six of the seven experts are partners, and the experts average nearly 23 years of audit experience. On average, the experts have spent over half of their careers on multinational audits. In terms of educational background, four of the experts have undergraduate degrees, and three have graduate degrees.

As in Okopny and Strawser, the "magnitude estimation method" was used to measure the experts' beliefs. Magnitude estimation involves rating each item in a group relative to a baseline item. Items more important than the baseline receive higher ratings than the baseline, and less important items receive lower ratings. For example, in this study, one particular factor, "the amount of time elapsed since last visit to subsidiary", was assigned a score of 20 by the author. The experts then rated each of the other 33 factors relative to this factor, the baseline. More important factors were rated greater than 20, and less important factors were scored under 20. For example, a factor considered twice as important as the baseline would receive a score of 40 (20×2). A factor half as important would be scored a 10 (20×0.5). In

Table 1. Characteristics of seven experts

| | |
|---|------------|
| Level in firm: | |
| Partner | 6 |
| Senior manager | 1 |
| Years of audit experience: | |
| Mean | 22.9 years |
| Range | 8-31 years |
| Percentage of career spent on multinational audits: | |
| Mean | 55.3% |
| Range | 20-100% |
| Educational background: | |
| Undergraduate degree only | 4 |
| Graduate degree | 3 |

this manner, the magnitude (importance) of each factor is estimated relative to a baseline factor.

The advantage of the magnitude estimation method is that the subjects do not have to rank the 34 factors. Rather, their rankings were inferred from the points assigned to each of the 34 factors (i.e., the highest rated item was ranked first, etc.). The seven sets of rankings (one for each expert) then were averaged to arrive at the overall ranking of the 34 factors. The results are presented in Table 2 by expert and overall.⁸

The most important risk factor is the presence of any significant or unusual transactions at the subsidiary.⁹ Such transactions present the possibility of material error. Four different measures of subsidiary size are found among the eight most important factors. It appears that obtaining a certain percentage coverage of the balance sheet and income statement is a primary goal of auditors. Client and audit committee expectations, the third and ninth highest rated factors, respectively, also are quite important in the scope decision. Other important factors include large changes in subsidiary net income and the subsidiary's violation of debt covenants (financial condition), as well as the competence of the subsidiary's accounting personnel. Interestingly, the most important factors do not reflect the unique nature of multinational clients. Unusual transactions, subsidiary size, and client expectations are factors applicable to domestic audits as well as multinational audits.

The factors rated as least important appear fairly reasonable. The four lowest rated factors are distance from US headquarters to subsidiary, similarity of foreign Generally Accepted Accounting Principles (GAAP) to US GAAP, cost of auditing the subsidiary, and state of technology/computerization in the foreign country. The low ranking of the computerization factor is somewhat unexpected given the ability of computerized accounting systems to help prevent certain types of errors.

A few risk factors were rated lower than expected. The strength of the subsidiary's internal control system was rated 17th of the 34 factors. Perhaps the higher ratings for the competence of management and accounting personnel reflect a dimension of internal control strength. Also, the high degree of trust and honesty in some countries leads to limited control systems.¹⁰ The economic and political stability of the foreign country also were rated low – 25th and 28th, respectively. It may be that the importance of these factors is partly reflected in the higher ratings for the financial condition of the subsidiary and the presence of significant or unusual transactions. Also, most of the experts' multinational clients had significant foreign operations in Western Europe or Japan – areas with fairly stable economic and political climates.

The overall pattern of results is very different from the international internal auditor responses in Okopny and Strawser. Three of the most important external audit factors – size, client (management) expectations, and financial condition of the subsidiary – are rated 22nd, 17th, and 27th, respectively, by the internal auditors (out of 44 factors). The top four internal audit factors – internal control effectiveness, extent of computerization, deficiencies found in previous audits, and language considerations – were rated 17th, 31st, 16th, and 26th, respectively, by the external auditors (out of 34 factors). The vastly different responses of these two groups of experts illustrate the different goals of internal and external multinational auditors. Internal auditors are more interested in operational efficiency and internal control,

Table 2. Ranking of 34 factors considered in multinational audit scope decision

| Risk factor | Ranking by expert | | | | | | | Average ranking ^a | Overall ranking ^b |
|--|-------------------|----|----|----|----|----|----|------------------------------|------------------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | |
| Significant or unusual transactions | | | | | | | | | |
| at subsidiary | 1 | 2 | 4 | 4 | 1 | 11 | 7 | 4.29 | 1 |
| Size of subsidiary: revenues | 1 | 2 | 8 | 4 | 1 | 2 | 14 | 4.57 | 2 |
| Client expectations (request to visit location) | 1 | 23 | 8 | 1 | 1 | 5 | 2 | 5.86 | 3 |
| Size of subsidiary: net income | 1 | 2 | 8 | 4 | 1 | 1 | 24 | 5.86 | 3 |
| Large changes in subsidiary's net income | 8 | 11 | 8 | 4 | 1 | 5 | 7 | 6.29 | 5 |
| Size of subsidiary: key balance sheet lines | 1 | 2 | 8 | 4 | 13 | 2 | 14 | 6.29 | 5 |
| Subsidiary's violation of debt covenants | 8 | 2 | 8 | 15 | 1 | 11 | 2 | 6.71 | 7 |
| Size of subsidiary: assets | 1 | 2 | 8 | 4 | 22 | 2 | 14 | 7.57 | 8 |
| Audit committee expectations | 1 | 11 | 8 | 27 | 1 | 5 | 2 | 7.86 | 9 |
| Competence of subsidiary's accounting personnel | 16 | 13 | 1 | 1 | 13 | 11 | 2 | 8.14 | 10 |
| Recent changes in subsidiary's operations | 16 | 1 | 4 | 4 | 13 | 17 | 7 | 8.86 | 11 |
| Recent turnover of subsidiary's accounting personnel | 16 | 13 | 8 | 4 | 1 | 17 | 7 | 9.43 | 12 |
| Competence of subsidiary's management | 16 | 13 | 1 | 15 | 13 | 8 | 1 | 9.57 | 13 |
| Internal audit coverage of subsidiary | 8 | 13 | 4 | 24 | 1 | 11 | 7 | 9.71 | 14 |
| Subsidiary's actual versus budgeted results | 8 | 13 | 8 | 1 | 13 | 11 | 24 | 11.14 | 15 |
| Issues discovered in previous audits of subsidiary | 12 | 23 | 8 | 19 | 1 | 9 | 7 | 11.29 | 16 |
| Strength of subsidiary's internal control system | 16 | 13 | 1 | 19 | 13 | 17 | 2 | 11.57 | 17 |
| Recent changes in subsidiary's accounting system | 16 | 13 | 8 | 4 | 13 | 17 | 14 | 12.14 | 18 |
| Subsidiary's degree of autonomy | 12 | 2 | 25 | 15 | 13 | 17 | 14 | 14.00 | 19 |
| Ethical standards in foreign country | 29 | 2 | 25 | 4 | 1 | 17 | 24 | 14.57 | 20 |
| Extent of subsidiary's reporting to headquarters | 16 | 13 | 8 | 24 | 13 | 17 | 14 | 15.00 | 21 |
| Litigation against subsidiary | 12 | 26 | 4 | 15 | 22 | 17 | 14 | 15.71 | 22 |
| Amount of time elapsed since last visit to subsidiary | 25 | 23 | 8 | 19 | 22 | 9 | 14 | 17.14 | 23 |
| Extent of subsidiary's intercompany transactions | 12 | 13 | 8 | 27 | 26 | 11 | 24 | 17.29 | 24 |
| Country's economic stability | 25 | 29 | 23 | 4 | 26 | 25 | 7 | 19.86 | 25 |
| Language and cultural differences from US | 29 | 13 | 25 | 32 | 1 | 25 | 24 | 21.29 | 26 |
| Foreign statutory audit requirements | 29 | 2 | 25 | 32 | 26 | 25 | 14 | 21.86 | 27 |
| Country's political stability | 25 | 29 | 23 | 24 | 26 | 25 | 14 | 23.71 | 28 |
| Competence of audit firm personnel in foreign country | 16 | 29 | 25 | 19 | 22 | 25 | 31 | 23.86 | 29 |
| Age of subsidiary | 25 | 29 | 25 | 19 | 26 | 25 | 31 | 25.71 | 30 |
| State of technology/computerization in foreign country | 16 | 29 | 25 | 27 | 31 | 25 | 31 | 26.29 | 31 |
| Cost of auditing subsidiary (impact on audit fee) | 29 | 26 | 25 | 27 | 31 | 25 | 24 | 26.71 | 32 |
| Similarity of foreign GAAP to US GAAP | 29 | 29 | 25 | 27 | 31 | 25 | 24 | 27.14 | 33 |
| Distance from US headquarters to subsidiary | 29 | 26 | 25 | 32 | 31 | 25 | 31 | 28.43 | 34 |

^a The average ranking is calculated as follows:

(Expert 1's ranking + ... + Expert 7's ranking)/7.

For example, the calculation for the first factor is:

(1 + 2 + 4 + 4 + 1 + 11 + 7)/7 = 4.29.

^b The overall rankings are derived from the average rankings. For example, the item with the highest average ranking (4.29) receives an overall ranking of 1.

while the external auditors focus on unusual transactions, size, and client expectations. Also note that the internal auditors were rating the factors by their importance to total audit planning, not just scope selection.

Multinational or Multilocation Audit Scope Guidance

Each of the Big Six firms allowed access to the portion of their audit manual (if any) that discusses multinational or multilocation audit scope selection. Due to confidentiality agreements with the firms, the discussion of their guidance is very general, and no firm names are provided.

Two firms have fairly extensive guidance that covers multilocation audit risk factors (several of the 34 factors rated above), the level of procedures that could be performed at a location, and materiality considerations. These two firms do not have models or formulas for determining the audit scope once the relevant risk and materiality judgments have been made. The actual selection of client locations and the determination of the extent of procedures is left to individual audit team judgment. The primary purpose of the guidance is to ensure that relevant factors are not ignored.

Two other firms discuss multilocation audit scope issues in their audit manuals, but at a much more general level (three pages or less). The two remaining firms have virtually no discussion of multilocation or multinational audit scope selection in their guidance. For these four firms (with moderate or little guidance), it also appears that the scope selection process is highly judgmental. No models or formulas are present in these firms' audit guidance. The judgmental nature of the process was corroborated through interviews of multinational auditing experts, as discussed in the next section. Due to the judgemental nature of multinational scope selection, the differences in formal guidance across firms may simply reflect different commitments to documenting firm procedures.

The variation in multinational audit scope guidance is not correlated with overall audit structure.¹¹ It is possible for a highly structured firm to have no multinational audit scope guidance, or for an unstructured firm to have extensive multinational audit scope guidance.

In addition to the formal audit scope guidance discussed above, all of the firms have other mechanisms in place to ensure that multinational auditors remain abreast of international auditing issues. Among the mechanisms are: multinational training sessions for partners, firm-wide multinational committees, distribution of GAAP updates on major countries, international exchange programs, multinational practice newsletters, international audit hotline, and a multinational audit database. The extent of these other mechanisms is fairly consistent across firms.

Big Six Auditors' Views

To examine other multinational audit planning issues not fully addressed in the firms' guidance, eight Big Six executives (one or more from each firm) were interviewed regarding their views of multinational auditing. Due to the high degree of consensus among the executives, only the composite views are presented below.

The experts report that information used in multinational audit planning is obtained from many sources, including internal audit, management, overseas statutory auditors, and the personal knowledge of the audit team members. One source of information

unique to multinationals is the reporting from statutory auditors overseas (who perform statutory audits during the year, often after the consolidated audit has been completed).

All six firms weight multinational risk factors qualitatively. The only exception is that materiality is quantitatively evaluated, but the qualitative factors then override the materiality assessment. Professional judgment is the key to the multinational scope selection process. The experts perceive the primary difference between multinationals and multilocation domestic clients to be in the risk assessment process. Multinationals involve a much more extensive list of risk factors. Several of the factors listed in Table 2 are not relevant to multilocation domestic audits.

The experts state that randomly selected, immaterial client locations typically are not visited. Rather, the auditors focus on coverage of individually material locations. Client locations not visited usually are subjected to top-level analytical review procedures at the headquarters office, with questions about fluctuations typically answered by headquarters management.

The experts do not project errors found at one foreign location to other client locations. If an apparently "systematic" error is found, then the audit work may be expanded at other locations. Client locations are viewed as heterogeneous due to cultural differences across countries, although the Big Six firms view themselves to be fairly homogeneous around the world.

Finally, the experts reveal the audit scope to the client early in the year, but at a fairly general level. There is no concern about this timing due to trust of management and the tentative, general nature of the information provided.

These views and the firm guidance discussed earlier indicate that the multinational planning process is very judgmental. Auditors evaluate numerous risk factors and materiality measures, and then qualitatively combine these assessments into an audit scope judgment. The auditors direct their efforts at individually material locations. They view the client's foreign locations to be heterogeneous, thus reducing the use of error projection and statistical sampling.

Conclusion

This paper represents a preliminary view of multinational external audit planning. Information was gathered on important multinational audit risk factors, the multinational audit planning guidance in place at the Big Six firms, and Big Six auditors' perceptions of multinational auditing. Big Six auditors rely most heavily on significant or unusual transactions, subsidiary size, client expectations, and subsidiary financial condition when making multinational audit scope decisions. The Big Six firms have varying degrees of multinational audit planning guidance, but all firms rely on auditor judgment in the scope selection process. The use of error projection across client locations and random sampling of client locations to visit appears to be quite rare.

This study incorporated an implicit assumption that multinational auditing is inherently different from domestic auditing. Several factors suggest that the two types of audits are very different: (1) multinational experts believe that multinational audits can expose the auditor to political, economic, and cultural risks not found on domestic engagements; (2) multinational clients often engage in very complex or

unusual transactions, which also may have complicated tax consequences; and (3) the Big Six firms have separate multinational committees, multinational auditing specialists, and mechanisms in place to keep auditors abreast of multinational auditing developments. On the other hand, two results from the present study indicate that multinational audits (especially for clients with operations in Western Europe and Japan) may not be that different: (1) the risk factors rated most important in multinational audit planning are not unique to multinationals, but would apply to any larger client; and (2) four of the Big Six firms do not have extensive audit guidance on issues related to multinational auditing. Based on the evidence to date, it is not clear how different the multinational audit setting is from the domestic audit setting. Future research should explore this issue and should consider multinational clients with operations in the Third World, where domestic/multinational differences could be most extreme.

Several other avenues for future research appear warranted. First, given the trend toward globalization, it is important to understand whether audit quality will decline as firms are faced with greater client complexity. Studies of audit quality in domestic versus multinational companies could provide insight on this issue. Second, information asymmetry (between management and the auditor) may be greater on multinational audits than on domestic audits. Multinationals may have important accounting issues at remote overseas locations, and the auditor's only source of information may be client management. The implications of this potential asymmetry should be examined. Finally, the scope selection process can be further explored. Of particular interest is whether the judgmental process used by the firms results in any systematic behavioral biases and whether it results in an appropriate matching of risk and audit effort. Perhaps quantitative scope selection models can be developed to assist in this decision.

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7. The auditors were instructed to ignore statutory audit requirements and focus only on the scope decision for the audit of the consolidated company. Statutory audit requirements were included as one of the 34 risk factors to see if such requirements influence the auditors' scope decisions for the consolidated company audit.
8. As in Okopny and Strawser, a large number of "ties" is evident in the experts' ratings. In the present study, each expert essentially grouped the 34 factors into an average of six levels of importance (versus an average of seven levels for Okopny and Strawser's 44 factors).
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The Financial Characteristics of Hong Kong Tender Offer Targets

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Key words: Characteristics; Financial; Hong Kong; Logistic; Tender offer

Abstract: *In recent years discussion has focused on the usefulness of accounting information to the explanation and prediction of corporate takeovers. This paper extends this literature by exploring a range of accounting information sources in the Hong Kong acquisitions market. For this purpose, 42 pairs of takeover target firms and matching control firms are considered over the period 1987–89. Applying logistic regression analysis to a range of financial ratios computed from data recorded for the accounting year end immediately prior to the acquisition announcements reveals a relatively high success rate in the classification of the target and matching non-target companies. Furthermore, a number of significant differences are noted in the financial ratios across the target and control firms. In particular, target firms are associated with significantly higher liquidity and profit growth levels and lower gearing levels than is the case in the matching control firm sample. Finally, application of the estimated logit function to a future dated sample of matching target and control firms reveals some degree of predictability in the selection of acquisition targets using the financial accounting data scrutinized.*

This paper investigates the financial characteristics of firms confronted by the possibility of corporate takeover in Hong Kong. This investigation is motivated by the growing empirical literature relevant to the prediction of takeover targets. In general, the literature suggests that the financial characteristics of acquired firms may be helpful in predicting takeover targets [see, for example, Barnes (1990) and Bartley and Boardman (1990) for recent evidence]. This literature has, however, focused primarily on North American and UK data [see, for example, Simkowitz and Monroe (1971), Stevens (1973), Hasbrouck (1985), Walkling (1985), Palepu (1986) and Bartley and Boardman (1990) for the United States; Belkaoui (1978) and Rege (1984) for Canada; Tzoannos and Samuels (1972) and Barnes (1990) for the United Kingdom].¹ Consequently, very little is known about the financial

characteristics of acquisition targets outside of these markets. To help remedy this situation, attention in this paper is focused on acquisition targets in Hong Kong. From the viewpoint of acquisition activity, this market is interesting because it is relatively under-researched and, moreover, is relatively active.

The investigation in this paper is first directed, in section 1, to the background issues and empirical literature relevant to this study. Section 2 then describes the data and empirical methods employed in this study. Section 3 details and discusses the results of the empirical analysis. Finally, section 4 provides conclusions and offers directions for further research.

1. Background to the Study Problem

One possible research design for investigating the financial characteristics of firms facing corporate takeover is to construct a matching sample of acquisition targets and non-target (control) firms where pair-wise matching is made in terms of firm size, business/industry activities, and years of accounts. This matching procedure has been adopted in the majority of related studies. However, Palepu (1986) seriously questions the use of such an approach and suggests that the probability of identifying or predicting takeover targets in the matched-pairs approach is likely to be positively biased. In response to this, however, two points can be made. First, notwithstanding the criticisms of Palepu, the matching procedure can still be used to provide an ordinal type ranking of probabilities of takeover (as noted in Palepu). Second, the alternative to a matching sample of target and non-target firms is a random sample of target and non-target firms and, as argued by Barnes (1990, pp.75–76), is subject to a number of problems. In particular, given the dominance of non-acquired firms to acquired firms in any population, a relatively large random sample of firms is required to generate a sufficient number of acquisition targets for analysis. In the case of Hong Kong, this would mean that the complete population of listed firms on the Stock Exchange of Hong Kong (SEHK) would need to be scrutinized. This is clearly costly from a data-sampling viewpoint. A second and more telling criticism of Palepu's (1986) random sampling approach, offered in Barnes (1990, p.76), is that some negative bias may actually be imparted into the calculated probabilities (of takeover) when using such a random sampling approach. The argument here is that the determination of the probability of an acquisition attempt and, therefore, its success is time dependent and that in any period a firm may be classified as a non-target even if it is confronted by acquisition threats in subsequent periods. Consequently, Barnes suggests that the "longer-term" probability of acquisition may be inadequately captured within the random sampling approach. Given the above discussion, some justification for the use of the matched pairs approach can be made. Accordingly, this approach is adopted in this study.

To help identify the essential characteristics of acquisition targets and matching non-target firms in Hong Kong, logistic (logit) analysis will be used [see Hosmer and Lemeshow (1989) for a discussion of logistic regression]. Logit analysis is used where the dependent variable of interest has either a 0 or 1 value. The dependent variable in this context refers to the selection of a target firm (value = 1) or a

matching non-target firm (value = 0). It is important to note that multivariate discriminant analysis (MDA) can also be applied where a 0, 1 dependent variable is used. However, certain methodological problems arise when using this approach. In particular, MDA assumes multivariate normality in the explanatory variables specified and that the variance-covariance matrices, in the experimental and matching control groups, are equal. In comparison, logit analysis is developed using much weaker assumptions [see McFadden, 1984; Lo, (1986) Hosmer and Lemeshow (1989)] and. An additional benefit of the logit approach is that, unlike MDA, it allows the significance of individual explanatory variables to be discerned. This is an important consideration within the present study given an interest in the identification of the significant financial characteristics/ratios relevant to target firms. Given the relative merits of the logit model, attention is focused on this approach in the ensuing analysis.

2. Data and Empirical Analysis to be Employed

2.1. The Sample of Acquisition Targets and Matching (Non-target) Firms to be Examined

In performing the analysis in this paper, 42 acquisition targets were considered from acquisitions made during the period 1987–89 in Hong Kong. The acquisitions considered in this respect were made through tender (general) offerings. Attention was focused on this method of acquisition for two reasons. First, tender offerings occurred more frequently in Hong Kong, over the period 1987–89, than either mergers or proxy fights allowing a relatively large number of tender offerings to be examined. Second, given the possibility of the financial characteristics of acquired firms differing across acquisition forms, it was thought prudent to focus on one method of acquisition only; namely tender offerings.

An indication of the importance of tender offerings, over the period 1987–89, is given in Table 1.

Table 1. Listed companies facing acquisition through tender offerings in Hong Kong over the period 1987–90

| Year | No. of tender offerings recorded for Hong Kong listed companies (1) | No. of HK listed companies (2) | Percentage of listed companies involved in tender offerings {[(1)/(2)].100} |
|------|--|-----------------------------------|--|
| 1990 | 13 ^a | 299 | 4.34% |
| 1989 | 12 ^a | 298 | 4.03% |
| 1988 | 20 ^{b, c} | 304 | 6.58% |
| 1987 | 25 ^b | 276 | 9.06% |

Source: All information shown is compiled from data disclosed in the Stock Exchange of Hong Kong (SEHK) Ltd *Fact Book* for the respective years 1986, 1987, 1988, 1989, and 1990.

Note: All mergers, de-mergers, schemes of arrangement and group re-organizations are excluded from the information shown.

^a Tender offerings leading to successful acquisition. In such cases, the year of entry in the table relates to the time of the acquisition proposal/announcement (Noting that takeovers recorded in a particular year of the *Fact Book* may have been proposed in the preceding year).

^b Figures include all acquisition *proposals* employing a tender-offering method.

^c Figures for proposed acquisitions in 1988 and 1987 show the number of companies facing an acquisition proposal (not the total number of tender offerings made in these period²).

In Table 1 reference is made to both successful and unsuccessful acquisition attempts through tender offering. Success, in this context, is defined in accordance with Rule 30.1 in *The Hong Kong Codes on Takeovers and Mergers and Share Repurchases*, where a successful tender offering is deemed to occur when the acquiror, or any parties acting in concert with the acquiror, obtain 50 percent or more of the voting shares in the target firm. Failure to meet this acceptance condition ultimately leads to the withdrawal of any offer by the potential acquiror. This background is important in understanding the information shown in Table 1, since successful and unsuccessful acquisition attempts are included in the information recorded across the time-frame 1987-90. The information recorded for the years 1989 and 1990, for example, only show the total number of successful raids while that recorded for 1987 and 1988 show the total number of target companies facing tender offerings. While this suggests some difficulty in comparing acquisition activity across the 1987-90 period, it should be borne in mind that in the majority of tender offerings, in Hong Kong, a successful outcome typically emerges.³ Given this, some insight into the level of acquisition activity, across the 1987-90 period, can be discerned from the information shown in Table 1. In any event, the distinction between successful and unsuccessful tender bids may not be that significant in the present study since the issue of interest is how one identifies the financial characteristics of firms attracting takeover bids. As noted in Walkling (1985),⁴ the success of an acquisition may be explained by factors that are extraneous to the information contained in the financial accounts of the target company. In contrast, the selection of the target company as a candidate for acquisition hinges more significantly on the nature of the information disclosed in the target company's financial accounts.

As well as the distinction between successful and unsuccessful tender offerings, one can also separate offers into conditional and unconditional categories. The distinction is largely driven by Rule 26.1, parts a-d, in *the Hong Kong Code* which requires any party, or group of connected parties, with an interest of 35 percent or more of the voting share capital in a listed corporation to submit a mandatory offer for the remaining shares held in minority hands.⁵ This ruling means that once a "control" level of 35 percent is breached, an acquisition attempt is immediately triggered. This acquisition is then conditional upon satisfaction of the acceptance condition, Rule 30.1, specified in *The Hong Kong Code* [see Rule 26.2 in *The Hong Kong Code*]⁶ and any other conditions stipulated by the acquiror. In contrast, an unconditional offer typically applies when the acquiror already holds an interest of over 50 percent in the target firm so that the acceptance rule (Rule 30.1) does not apply [see Note 1 to Rule 26.2 for further elaboration of this point]⁷. From inspection of the SEHK's *Fact Book* it appears that both conditional and unconditional methods figure in significant numbers in Hong Kong acquisitions. From the 13 proposals recorded for 1990 in the *1990 Fact Book*, for example, five were conditional and eight were unconditional. In terms of the study at hand, it is not clear whether a distinction should be made between the two types of offer since both offer forms would suggest, to the passive observer, an interest in the underlying assets or characteristics of the target firm. In a conditional acquisition, for example, which can be viewed in some ways as a "technical" acquisition, a significant interest in the

target company must still have been acquired through open market means immediately prior to the offer.

Given the above background, attention was focused on both conditional and unconditional offerings in developing the sample frame for analysis in this study. With this in mind, the 57 tender offerings recorded in Table 1 between the years of 1987 and 1989 were initially scrutinized. This sample was then pared down to 42 firms. The reduction in acquired firms from the available level of 57 reflected the difficulties involved in matching target firms to non-target firms and the need to remove companies that were acquired, or involved in tender offerings, more than once⁸ during the period 1987-89. In setting up the design for matching, non-target firms were defined as firms that were not subject to tender offers over the period of interest, 1987-89, or in the years immediately prior to and subsequent to the acquisition announcement/proposal dates in the corresponding target firms.⁹

In selecting the possible non-target firms for matching, careful examination of the financial histories of listed Hong Kong firms was made using Hong Kong based *Wardley Cards* and *The Stock Exchange Handbook* (1987 and 1988). Having defined the possible sub-set of matching non-target firms over the period of interest, 1987-89, acquisition target firms were then matched to the non-target firms in accordance with three criteria. First, firms were matched in terms of size using the market capitalization of the firms at the accounting year ends immediately prior to the acquired firms' acquisition announcement. Second, matching was made so that target firms of a specific business type were also matched to non-target firms of the same business category. Finally, the years of accounts of target and non-target companies were also matched.

The most onerous area of matching proved to be the pairing of target and non-target firms in terms of industry-specific business operations. A rather more liberal interpretation of business operations, as in the classification scheme adopted for Hong Kong Index Stocks where companies are grouped into six broad business type categories, would have allowed a larger group of matched pairings to be made. However, given the likely importance of specific industry/business type to the financial characteristics of target firms, care was taken to ensure that firms were matched in terms of their specific business operations.

Given the size of the local market and the constraints involved in matching, the sample period 1987-89 could not be extended to include firms acquired through tender offerings in either 1990 or 1991 or in the years preceding 1987 [for reference purposes, see Taylor and Poon (1991) for an indication of the incidence of takeovers/schemes of arrangement during these years]. Matching of target firms to non-target firms from 1987 to 1989 reflected the concentration of acquisition attempts in the years of 1987 and 1988 (Table 1) as well as the desire to restrict the time-frame of analysis. This restricted time-frame is motivated by evidence that financial ratios may be unstable over time [see for example, Pinches et al. (1973)].

Finally, in this subsection, details of the matching pairs of target and non-target firms to be analyzed, the date of the acquisition announcement relevant to each target firm and the business activities of the matching pairs are all recorded in Appendix 1.

2.2. The Financial Characteristics/Ratios of the Acquisition Target and Non-target Firms to be Examined

In assessing the financial characteristics of acquired Hong Kong firms, a range of profitability, liquidity, efficiency, and gearing ratios are considered. Details of the specific ratios used are outlined in Table 2.

To gain an initial insight into the relative magnitudes of the financial ratios outlined in Table 2, reference should be made to Appendix 2 where descriptive statistics are shown for all 14 ratios considered. Initial inspection of these statistics reveals that the financial ratios in the sample of target firms exhibit greater levels of variance than is the case in the matching/control group of firms. This may reflect a more volatile and unstable pattern of performance in firms that serve as possible takeover targets. More important, however, is the observation that the firms in the target sample had, on average, higher levels of liquidity as measured by their current (CR) and quick assets (QAR) ratios, respectively. Indeed, differences between means *t* tests reveal that these liquidity ratios are significantly larger, at the 5 percent level, than in the control sample of firms. This provides initial support for the well-publicized view that certain firms are ripe for takeover simply because of the significant cash and liquidity reserves they contain which, given a clear investment strategy on the

Table 2. Variable descriptions: the financial ratios to be used

Dependent binary variable

ACQ coded 1 for a target firm
coded 0 for a matching (non-target) firm

Explanatory variables

Profitability ratios

1. ROEE = Return on shareholders' equity/funds (%)
2. ROCE = Return on capital employed (%)
3. PRG^a = Profit growth (%)
4. DR = Proposed dividends divided by net profits

Liquidity ratios

5. CR = Current ratio
6. QAR = Quick assets ratio
7. CAR = Current assets to total assets ratio
8. CASH = Cash to total assets ratio
9. NCA = Net current assets to total assets ratio

Efficiency ratios

10. INV = Inventory to sales turnover
11. RST = Return on sales turnover (%)

Gearing ratios

12. GEAR^b = Long term liabilities to total capital employed
13. DEBT = Total liabilities to total assets

Other ratios

14. MBV^c = Market to book value (market capitalization divided by net assets)

^aDefined as the growth in net profits over the two years of accounts immediately prior to the announcement date in the tender offering for the target firm.

^bTotal capital employed for GEAR is defined as total assets less current liabilities.

^cMarket capitalization levels are defined using stock prices determined at the close of the nearest quarter month, i.e. March, June, September or December, prior to acquisition announcement where a quoted share price for the stock is available.

part of the raider, allow for significant productive investment opportunities. This interpretation should be viewed with some caution, however, for two reasons. First, the existence of outlying observations in any of the financial ratios scrutinized may seriously bias the descriptive statistics shown in both the target and matching firm samples. Second, and perhaps more significantly, appreciation of the importance of the financial ratios described above, and in Appendix 2, may only emerge after account has been made of any multiplicative effects that may exist between the financial ratios described. Highlighting such multiplicative effects would also render the biasing effects of any outlying financial ratio values less significant in the overall interpretation of results.

Given the above discussion, the explanatory power of the *set* of financial ratios outlined in Table 2 should be considered in evaluating the incidence of acquisition bids in the Hong Kong market. However, it is probably unwise to consider all 14 financial ratios in unison to explain the dummy variable ACQ, since a number of the variables shown in Table 2 are closely related or overlapping in nature. Given this, the essential variation in the financial characteristics/ratios of the target/non-target firm data can be extracted by selecting those ratios that account for the majority of this variation. This is achieved through principal components analysis (PCA) [see Koutsoyiannis, 1983, pp. 424-436, for a useful review of PCA] and leads to the identification of five ratios explaining 84.3 percent of the variation in the original data matrix. The five ratios identified all have eigen values exceeding 1 in the PCA analysis. These ratios are CR, ROEE, CAR, GEAR, and PRG (see Table 2 for further elaboration).

Having selected the CR, ROEE, CAR, GEAR, and PRG ratios, logistic regression analysis can then be used to examine the degree to which the ratios classify target and non-target firms correctly in Hong Kong and also to determine the significant explanatory variables underpinning this classification. In this regard, the first 30 of the 42 matching pairs of target and non-target firms are used to estimate the parameters of the CR, ROEE, CAR, GEAR, and PRG variables in the logistic regressions, with the final 12 matching pairs acting as a future-dated sample. The first 30 matching pairs, in this context, cover the acquisition announcements between January 1987 and July 1988 (Appendix 1) while the 12 future dated matching pairs, used to test the predictive accuracy of the estimated logit function, cover acquisition announcements between October 1988 and December 1989 in Hong Kong.

3. Empirical Results

Performing logistic regression analysis of the target/non-target dummy variable ACQ against the financial variables CR, ROEE, CAR, GEAR, and PRG identified in the PCA, for the first 30 pairs of matching firms, reveals that 68 percent of the matching firms can be correctly classified. This classification is achieved by inferring the probability of an acquisition attempt, P_a , from the estimated logistic regression results in Table 3. For each of the target and non-target firms considered, P_a can be calculated using the specific data values for the CR, ROEE, CAR, GEAR, and PRG variables

for these firms and transforming the data to form a probability of acquisition, P_a , as follows :

$$P_a = 1/(1 + e^{-(0.6892 + 0.1006 \times CR - 2.0820 \times ROEE - 1.1645 \times CAR - 5.3877 \times GEAR + 0.3511 \times PRG)})$$

Where $(0.6892 + 0.1006 \times CR - 2.0820 \times ROEE - 1.1645 \times CAR - 5.3877 \times GEAR + 0.3511 \times PRG)$ is the estimated logistic function shown in Table 3.

Having determined a P_a value for each of the target and non-target firms, a firm is then classified as a target firm if P_a is greater than 0.5 and a non-target firm if P_a is less than 0.5¹⁰. This cut-off probability reflects the pair-wise matching of target and non-target firms so that if one were to choose, in a non-discriminating or random manner, between any pair of target and non-target firms, the probability of correctly classifying the firms would clearly be 0.5. Given this cut-off probability, 68 percent of the firms included in the first 30 matching pairs of target and non-target firms can be correctly classified using the financial accounting data analysed in Table 3. This observation, as well as the significant χ^2 statistic for the estimated logistic equation in Table 3, indicates that the explanatory variables CR, ROEE, CAR, GEAR, and PRG have a significant degree of discriminatory power across the matching target and control firms.

In addition to the overall significance of the estimated logistic equation in Table 3, it is also important to note that significant coefficients are recorded, at the 10 percent level, for the CR, GEAR, and PRG variables in the estimated equation.¹¹ The signs on the estimated coefficients of these variables indicate that acquisition target firms in Hong Kong have significantly higher liquidity levels (as measured by

Table 3. Logistic regression results of ACQ against CR, ROEE, CAR, GEAR, and PRG for the first 30 matching pairs of target and non-target firms in the sample

| Dependent variable: ACQ | | | |
|--------------------------|--------------------------------|----------------------------------|---------------------------------------|
| Explanatory variables | Estimated coefficient | Wald statistic | Significance level |
| CR | 0.1006 | 4.3573 | 0.0369 |
| ROEE | -2.0820 | 2.5237 | 0.1121 |
| CAR | -1.1645 | 1.0336 | 0.3093 |
| GEAR | -5.3877 | 3.1344 | 0.0767 |
| PRG | 0.3511 | 3.6142 | 0.0573 |
| Constant | 0.6892 | 1.2820 | 0.2575 |
| | χ^2 of equation | d.f. | Significance of equation |
| -2 Log Likelihood | 66.712 | 54 | 0.1148 |
| Model χ^2 | 16.465 | 5 | 0.0056 |
| | No. of correct classifications | No. of incorrect classifications | Percentage of correct classifications |
| Matching firms (ACQ = 0) | 19 | 11 | 63.33% |
| Target firms (ACQ = 1) | 22 | 8 | 73.33% |
| All firms ($N = 60$) | 41 | 19 | 68.33% |

CR), lower gearing or debt levels (as measured by GEAR), and higher growth in profits than matching non-target firms. The results for the CR and GEAR variables are not too surprising since firms with a surplus of cash or liquidity allow for considerable reinvestment opportunities using available firm funds, while lower gearing levels in acquired firms provide fewer constraints for any bidding companies taking charge of resources in acquired firms. For the significant positive coefficient on the PRG variable, however, the explanation is less clear. One possible explanation for this result is that current profit growth rates serve as an indicator of expected future growth rates. This would clearly make high-growth firms an attractive investment proposition both for the individual investor and the corporate raider. While this argument is plausible, it challenges, to some degree, the oft-cited argument that low-growth/poor-performing firms are more likely to be takeover targets given their potential for increased growth following some structural reorganization. In this argument, the potential for increased growth is typically linked to the replacement of the incumbent management team allowing superior returns to be established through a reduction in agency costs and the selection of productive firm investments.

The pattern of significant explanatory variables noted above can also be compared to findings recorded in other studies which have attempted to identify the financial characteristics of acquired/target firms. It is interesting to note that support for a liquidity factor (CR in this study) in the identification of acquisition targets is also featured in other studies [see, for example, Hasbrouck (1985)]. Support for a gearing factor (GEAR in this study) in the identification of acquisition targets is also recognized in a number of other studies [see, for example, Stevens (1973)].¹² However, the importance of the profit growth variable (PRG) as a significant explanatory variable for acquisition is not featured in the literature. Despite this, there is some indication in the literature that profitability, or the efficient use of existing resources, is important to the identification of takeover targets. Dietrich and Sorenson (1984), for example, note the importance of asset turnover (sales turnover/total assets) in identifying merger targets in the United States. The negative sign on this variable, in Dietrich and Sorenson, suggests that firms operating less profitably or less efficiently are more likely to be acquired. The suggestion here is that the merger activity can be used to increase the target firm's efficiency. As far as the present study is concerned, there is some support for this view in the estimated logistic regression results in Table 2. Within these results, the return on equity employed variable, ROEE, is negatively signed and significant at the 11 percent level, which suggests some support for the view that target firms in Hong Kong are less profitable than the matching non-target firms scrutinized. However, there is no additional evidence in Table 3 to suggest that the lower profitability levels on the target firms are due directly to the inefficient use of corporate resources.¹³.

One further variable that has received support as a significant explanatory variable of acquisition targets in the literature is Tobin's *q* ratio (see, for example, Hasbrouck, 1985). This variable, measured by the market value of a firm's assets to their replacement value, is not analysed in the present study given the absence of inflation adjusted values for firm assets in the annual reports of Hong Kong companies. Given this, the variable MBV, defined as the market value of the firm's equity

divided by its book value, is suggested as a possible substitute for the q ratio. However, this variable proved to be insignificantly related to the incidence of acquisition attempts in Hong Kong when included in the logistic regression analysis. This result does not necessarily invalidate the importance of the q ratio in explaining acquisition attempts, however, since MBV may correlate fairly weakly with the q ratio. Indeed, this is suggested in Bartley and Boardman (1986) where the replacement of the conventional MBV valuation measure by the q ratio significantly improved the classification accuracy of takeover prediction using a multivariate discriminant model for acquisition targets in the United States. While such a model is not used in the present study, it is conceivable that the replacement of the MBV measure by Tobin's q might further improve the predictive accuracy of the logistic model examined in this paper. Unfortunately, the absence of inflation-adjusted information prevents empirical validation of this insight.

To shed further light on the significant results noted in this study, a test of the predictive power of the estimated logistic regression equation in Table 3 is made using the future-dated sample of matching pairs defined earlier. For the target and non-target firms in the 12 matching pairs assembled for this purpose, a predicted probability of acquisition, P_a , is formed using the estimated logistic regression equation in Table 3. This probability, P_a , as noted earlier, is formed as follows:

$$P_a = 1/(1 + e^{-(0.6892 + 0.1006 \times CR - 2.0820 \times ROEE - 1.1645 \times CAR - 5.3877 \times GEAR + 0.3511 \times PRG)})$$

Where $(0.6892 + 0.1006 \times CR - 2.0820 \times ROEE - 1.1645 \times CAR - 5.3877 \times GEAR + 0.3511 \times PRG)$ is the estimated logistic function shown in Table 3.

Applying the above function to the 12 future-dated matching pairs indicates some degree of success in identifying target and non-target firms. The classification success attained is indicated in Table 4. Using a cut-off probability of 0.5, an overall success rate in classifying target and non-target firms of 58 percent is indicated in Table 4. This classification success can be improved, however, by selecting a cut-off probability that minimizes the sum of incorrect classifications. In this context, a cut-off probability of 0.35 is used where predicted probabilities (P_a) less than 0.35 signify the prediction of non-target firms and predicted probabilities exceeding 0.35 signify target firms. Using this cut-off probability suggests an overall classification rate in the hold-out sample of nearly 67 percent which compares favorably with the 68 percent success rate noted for the 30 matching pairs in the primary sample in this study.¹⁴ This approach for classifying firms is chosen given the absence of cost specifications relating to type I and type II errors.

In interpreting the predictive accuracy of the estimated logit function on the future-dated sample of target/non-target pairs, some cautionary points should be made. First, the small number of pairings in the future-dated sample limit, to some degree, the significance of the classification rates documented in Table 4. However, given the strict criteria required for matching target and non-target companies and the size of the local market, it was not possible to enlarge the size of the future-dated sample significantly. Despite this, the classification rates documented for the future-dated sample provide useful illustrative information on which to judge the predictive accuracy of the estimated logit function.

Table 4. The classification of target and non-target firms in the future-dated holdout sample based upon the estimated logit function in Table 3

4.1 Classification using the predicted probability, P_a , equal to 0.5 as the cut-off point in identifying target and non-target firms

| | No. of correct classifications | No. of incorrect classifications | Percentage of correct classifications |
|----------------------------|--------------------------------|----------------------------------|---------------------------------------|
| Non-acquired firms (ACQ=0) | 8 | 4 | 66.66% |
| Acquired firms (ACQ= 1) | 6 | 6 | 50.00% |
| All firms ($N = 24$) | 14 | 10 | 58.33% |

4.2 Classification using predicted probabilities that minimize the sum of misclassifications (Cut-off probability = 0.35)

| | No. of correct classifications | No. of incorrect classifications | Percentage of correct classifications |
|-----------------------------|--------------------------------|----------------------------------|---------------------------------------|
| Non-acquired firms (ACQ =0) | 7 | 5 | 58.33% |
| Acquired Firms (ACQ= 1) | 9 | 3 | 75.00% |
| All firms ($N = 24$) | 16 | 8 | 66.66% |

In addition to the above point, it is clear that variations in industrial groupings may determine, to some degree, the precise form of the estimated logit function used to construct the predicted probabilities of an acquisition attempt in the future-dated sample. However, given a concentration of property/investment based firms in both the primary and future-dated hold-out samples, the logit function estimated from the primary sample should apply reasonably well, at the industry level, to the target and non-target firms included in the future-dated hold-out sample.

Finally, in summarising the empirical results reported in this section, it is clear that a number of financial variables can be used to discriminate between target and non-target firms in Hong Kong. Furthermore, there is some evidence that the significant discriminatory variables identified can be used to distinguish target firms from non-target firms in future-dated samples. Before accepting these results in their entirety, however, certain qualifying remarks need to be made. First, the definition of an acquisition attempt formalized through a tender offering for stock may not fully capture the real incidence of corporate acquisition activity. For instance, acquisitions of stock leading to an interest of less than 35 percent in a firm can be made privately and do not normally occasion general offers. Consequently, firms who are not targeted by a tender offering, and who are not therefore under a formal threat of acquisition, may still face some form of acquisition activity. Given this point, a clear-cut distinction between a target and non-target firm may be something of an over-simplification. However, this simplification is probably necessary in order to gain insight into the financial characteristics of those firms that face real or significant acquisition threats (through the tender-offering mechanism). This view also seems to be implicit in the discussion of target/non-target firms featured elsewhere in the acquisitions literature.

A second important qualification in this study is that most of the acquisition attempts recorded in Hong Kong do not appear to involve "hostile" takeover bids by external corporate raiders. Instead, and as noted earlier in this paper, many tender offerings in Hong Kong are made by the existing stockholders in the target firms rather than by complete outsiders. This may mean that there are difficulties in comparing the research findings cited here with those in comparable studies. In defense, however, it is not clear how significant "hostile" takeover threats figure in the sample frames selected in other studies of other markets in this area. In any event, recent evidence in Eddey (1991), for example, suggests that the nature of the acquiror may not be significantly related to the financial characteristics/ratios of the chosen target firm [see Eddey (1991) p. 169)]. In Eddey's study, consideration was given to takeover bids made by "corporate raiders" and "other acquirors" where "corporate raiders", in this context, were characterized as individuals with an intent, as indicated through the media, to engage in acquisitive activity in the hope of profiting from under-valued assets [see Eddey (1991) p. 151 for further clarification]. While the bidder definitions used in Eddey do not allow a straightforward distinction to be made between, let us say, hostile and non-hostile takeover bids or external and internal bids, the results of his study suggest that even if target firms are partitioned by bidder type the financial characteristics/ratios of the target firms are probably not going to be too dissimilar.

As a final qualification, it should be noted that the empirical results in this paper do not provide an explanation for acquisition activity in the Hong Kong market. Indeed, conventional explanations for acquisition activity based upon the attainment of monopoly power by the raider, the development of economies of scale, the diversification of risk, the exploitation of synergistic benefits, and the benefits of acquiring under-valued resources are not tested directly in the present study. Instead, the results of this study indicate the degree to which financial-based accounting information can be used to discriminate and predict acquisition targets. This is not to say, however, that the financial accounting information scrutinized cannot be linked to the conventional explanations offered for acquisition-based activities. An examination of how this might be achieved awaits further study, however.

4. Conclusions

In conclusion, the analysis presented in this paper helps to fill an important gap in the literature by focusing attention on a rather neglected and significant market for corporate acquisition activity. In promoting this objective, 42 matching pairs of acquisition target and non-target firms were considered in the Hong Kong market over the period 1987-89. Applying logistic regression analysis to the first 30 of the 42 pairings, across a range of financial ratios computed prior to the acquisition announcements, indicated that 68 percent of the target and non-target companies could be correctly classified. In addition, a number of significant differences were noted in the financial ratios across the target and non-target firms. In particular, the target firms were found to have significantly higher liquidity and profit growth levels than the matching non-target firms scrutinized as well as significantly lower

levels of gearing. Finally, application of the estimated logit function to a future dated sample of matching target and non-target firms revealed some degree of predictability in the selection of acquisition targets using financial accounting data.

In summary, the evidence presented in this paper suggests that financial accounting information has some value in helping to discriminate between potential acquisition targets and non-target firms in Hong Kong and, ultimately, in the prediction of future-dated acquisition targets. These insights provide a useful contribution to the literature and help to extend and clarify documented findings in related studies in other markets [see, for example, Simkowitz and Monroe (1971), Stevens (1973), Hasbrouck (1985), Walkling (1985), Palepu (1986) and Bartley and Boardman (1986, 1990) for the United States; and Tzoannos and Samuels (1972) and Barnes (1990) for the United Kingdom].

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Notes

1. For a review of earlier documented evidence in the takeover prediction literature, reference can be made to Krinsky et al. (1988, pp. 261-265).
2. In 1988, for example, two tender offerings were recorded in the 1988 Stock Exchange *Fact Book* for the target company The Hong Kong and Shanghai Hotels Ltd. These separate bids were made by Rostik Ltd and Cathay City Investments Ltd in November 1988.
3. Reference can be made to the description of proposed takeovers listed in the SEHK's *Fact Book* for 1987 and 1988 which help to highlight the relative success of tender bids in Hong Kong. Similar evidence of a high success rate in takeover bids is also noted in Krinsky et al. (1988, p. 254) for the US market during the period of the 1980s.
4. Walkling (1985) attempted to predict successful tender offerings in the United States using logistic analysis. His research indicated the importance of factors extraneous to the financial accounts of the target company, including the degree to which incumbent management and shareholders fight bids and the proportion of equity held in the target firm by the raider prior to the announcement of the tender bid.
5. This means that up to 100 percent of the target's stock may be acquired upon completion of the offering. However, the SEHK typically requires the acquiring firm to sell off any holdings in excess of a 75 percent interest subsequent to the (conditional or unconditional) offer if the target firm is to retain its listed status. In the acquisition of Polly Peck in December 1989, for example, a 74 percent interest in the company had been acquired prior to the formation of an unconditional offer. Following the offer, the acquirer's interest rose to approximately 95 percent and it was then stipulated by the SEHK that, within two months of the offer, 25 percent of the listed stock in Polly Peck was to be held in public hands.
6. A recent example of such a conditional offer was made for Chung Wah Shipbuilding & Engineering Co. Ltd in June 1991. Prior to the offer, Strong Wing Co. had acquired a "controlling" interest of 41.3 percent of the share capital in Chung Wah and was therefore obliged to make a mandatory offer for all the shares in issue in Chung Wah. At the closing date in the offer, the acquirer's interest in Chung Wah's share capital was approximately 61 percent (see Wardley cards for further elaboration).
7. It should be noted, however, that an offer that is unconditional with respect to Rule 30.1, can still be made conditional subject to other conditions specified by the acquirer in the offer document.
8. In cases where a firm was acquired more than once during the period 1987-89, consideration was only given to the financial characteristics of the acquired firm at the first acquisition date.

9. In satisfying this requirement, a firm could only qualify as a match for an acquisition target if it had not faced an acquisition attempt during the 24 months preceding the proposed date of acquisition in the target firm.
10. The transformation used to form P_a ensures that P_a values follow a cumulative logistic probability function and that the values of P_a are bounded by 0 and 1.
11. Significance in this context is indicated by the Wald statistic. The Wald statistic is defined as the square of the ratio of the estimated coefficient in the logistic regression to its standard error and, for large samples, has a distribution approximating that of χ^2 .
12. However, Hasbrouck's (1985) findings indicate that measures of financial leverage provide relatively low explanatory power in the prediction of takeover targets.
13. Entering the sales to total assets variable into the logistic regression in Table 3 suggested that this variable was an insignificant explanatory variable of the dependent ACQ variable. Given this, support for an inefficiency argument could not be made.
14. Noting that the 68 percent classification rate in the primary sample was achieved using a cut-off probability of 0.5. Unlike the matching pairs in the future-dated sample, however, the percentage of correct classifications across the target and non-target firms in the primary sample could not be improved using an alternative cut-off probability.

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Appendix 1: The Matching Sample of Target and Non-target Firms Examined

| Target companies | | Matching companies | | |
|-------------------------------------|--------------------------------------|--------------------|-----------------------|--------------------------------------|
| ID coname | Business activities | Acquis. proposed | Coname | Business activities |
| 1. Hale Corp | Investment holdings/ properties | Dec 89 | Great Eagle | Investment holdings/ properties |
| 2. Success | Property/investment holdings | Nov 89 | Melco Int | Property ownership/ development |
| 3. Rose Knitting | Manufacturer of textiles | Oct 89 | HK Worsted | manufacturer of textiles |
| 4. THL Intl | Investment holdings/ properties | Aug 89 | Melbourne E | Investment holdings/ properties |
| 5. Kwong Sang | Properties/sale of cosmetics | | Century City holdings | Property/investment |
| 6. Ibi Asia (Hlds) | Investment holdings | Jan 89 | Cosmopol.P + S | Investment holdings/ property rental |
| 7. Tek Lee Fin | Property investment/ holdings | Dec 88 | Kai Ming I | Property/share investments |
| 8. HK & Shan H | Hotel ownership/ management | Nov 88 | New W Htls | Hotel ownership/ management |
| 9. Green Island | Manufacture/sale of cement | Nov 88 | K Wah Stone | Quarrying/construction materials |
| 10. HK Optical | Sale of optical and related products | Oct 88 | Jack Chia I | Manufacture/sale pharmaceuticals |
| 11. Richfield Int | Property development | Oct 88 | Pokfulam | Property development |
| 12. Sun On Estate | Property/share investment | Oct 88 | Wah Ha Real | Property investment |
| 13* Rainbow Or. Re: Polly Peck | Investment/share holdings | Jul 88 | Sun Co Ltd | Investment in property/ shares |
| 14. Samaha Inv | Property investment/ shipping | Jul 88 | Keng Fong Sk | Property sales/ investments |
| Target companies | | Matching companies | | |
| ID coname | Business activities | Acquis. proposed | Coname | Business activities |
| 15.* Local Prop. Re: Grand Hotel | Ownership and management of hotels | Jul 88 | Furama Hot | Ownership of hotels management |
| 16. Sun's Finance Re: Tomson Inv | Financial services | Jul 88 | Mansion HS | Financial services |
| 17. Tylfull Co | Investment holding | Jul 88 | Allied Ov I | Investment holding |
| 18. Scilla Hlds | Manufacturer/marketing of telephones | May 88 | National Ele | Manufacturer of consumer electricals |

continued...

Appendix 1 *continued*

| | | | | |
|---|--|--------|---------------|--|
| 19.* Int Rest & N Re: Parisco Intl | Investment holdings | May 88 | Hip Shing H | Property investment/ security holdings |
| 20. Ontrade Int | Security investment/ property holdings | Jan 88 | Wai Yick | Property investment/ security holdings |
| 21. Wai Wah Ship. Re: Paramount Dev | Investment holdings | Dec 87 | ONG Hds (HK) | Investment holdings |
| 22. Wah Kwong P | Properties/investment | Nov 87 | Hsin Chong | Property development and construction |
| 23. Yeun Sang | Investment holding/ watches | Nov 87 | Lap Heng | Investment holding/ manufacture watches |
| 24. Crocodile G | Manufacture/sale garments | Oct 87 | South Sea Tex | Manufacture/sale garments |
| 25. Ruby Hlds | Restaurants | Oct 87 | Cafe De Cor | Restaurants |
| 26. Magnific E | Property/share investments | Oct 87 | Oxford Pr | Property/share investments |
| 27. Eco Props Re: Tern Props | Property/investment holdings | Sep 87 | Huey Tai | Investment/ development property |
| 28.* Lee On Real Re: Yoshiya Intl | Development/sale properties | Sep 87 | Lucky Man PR | Property investment/ holdings |
| 29. New Era Land Re: EiE Developm. | Property ownership/ investment & hotels | Sep 87 | Far East Con | Property investment holdings |
| 30. Evergo Int | Investment holdings & consolidated business | Aug 87 | Conic Inv | Investment holdings & consolidated business |
| 31. Man Nin Inv | Property and share investments | Aug 87 | Sungala | Investment holdings & property develop. |
| 32.* Yeo Hiapseng Re: Ed & F Man Pac | Manufacturer/distrib beverages/food | Aug 87 | Shui Hing | Operator department stores |
| 33.* Wai Wah Ents Re: Rivera Hldgs | Property investment/ development | Aug 87 | Kailey Ents | Property investment/ development |
| 34. Standard-LL | Property & securities investment | Aug 87 | Keck Seng | Development/ managm. property |
| 35.* Nylex Realty Re: Chinney Inv | property investment/ development | May 87 | Good Earnings | Property development./ investment |
| 36.* Dart Dev. Co Re: Glynhill Intl | Investment property/ securities | Apr 87 | Estate Fin | Investment property/ securities |
| 37. Fu Fai Ent | Properties/investment | Apr 87 | SE Asia Prop | Property develop./ investment |
| 38. Union Globe Re: Guangdong Inv | Investment holding | Mar 87 | Public Intl | Investment holdings |
| 39.* Kok Thai Ent Re: Cathay City | Investment holding | Mar 87 | Hon Kwok L+I | Investment/property holdings |
| 40.* Dah Yuan Re Re: Rainbow Ori | Investments & securities | Mar 87 | SE Asia Inv | Investment holding/ properties |
| 41.* Franki Inv Re: Kier Kin Sun | Construction/civil engineering | Jan 87 | Tak Wing Inv | Construction/civil engineering |
| 42.* Union V-Tex R Re: Asia Secur | Property investment | Jan 87 | Seapower | Investment/property holdings |

Re: Companies renamed immediately following the acquisition raid or in periods subsequent to this.

* Acquisition targets renamed immediately following acquisition. This information was obtained by referring to the Stock Exchange *Fact Book* for each of the respective years 1987, 1988, and 1989.

Appendix 2: Descriptive Statistics for the Financial Ratios Defined in Table 2 Across the Target and Control Samples

| Variable | Descriptive statistics for TARGET firms | | | Descriptive statistics for CONTROL firms | | | Diff. between means | <i>t</i> stat. |
|----------|--|--|----------------------|---|--|----------------------|---------------------------|----------------|
| | Mean <i>M_T</i> | Stand. dev. <i>S_T</i> | <i>N_T</i> | Mean <i>M_C</i> | Stand. dev. <i>S_C</i> | <i>N_C</i> | | |
| ROEE | -0.03 | 0.88 | 42 | 0.16 | 0.30 | 42 | -0.19 | -1.32 |
| ROCE | 0.15 | 0.23 | 42 | 0.11 | 0.15 | 42 | 0.04 | 0.94 |
| PRG | -0.03 | 3.03 | 42 | -0.48 | 2.97 | 42 | 0.45 | 0.69 |
| DR | 0.40 | 0.60 | 35 | 0.44 | 0.37 | 37 | -0.04 | -0.34 |
| CR | 9.15 | 16.47 | 42 | 3.06 | 6.89 | 42 | 6.09 | 2.21** |
| QAR | 8.74 | 16.64 | 42 | 2.70 | 6.91 | 42 | 6.04 | 2.17** |
| CAR | 0.45 | 0.30 | 42 | 0.44 | 0.30 | 42 | 0.01 | 0.15 |
| CASH | 0.13 | 0.20 | 42 | 0.14 | 0.22 | 42 | -0.01 | -0.22 |
| NCA | 0.22 | 0.43 | 42 | 0.14 | 0.29 | 42 | 0.08 | 1.00 |
| INV | 0.29 | 1.24 | 40 | 0.24 | 0.47 | 42 | 0.05 | 0.24 |
| RST | 0.85 | 1.58 | 40 | 0.52 | 1.52 | 42 | 0.33 | 0.96 |
| GEAR | 0.11 | 0.26 | 42 | 0.09 | 0.15 | 42 | 0.02 | 0.43 |
| DEBT | 0.31 | 0.41 | 42 | 0.36 | 0.24 | 42 | -0.05 | -0.68 |
| MBV | 1.40 | 4.88 | 42 | 1.52 | 1.24 | 42 | -0.12 | -0.15 |

t statistics shown are calculated as:
$$\frac{(M_T - M_C)}{\sqrt{[(S_T^2/N_T) + (S_C^2/N_C)]^{1/2}}}$$

**Indicates *t* statistics significantly different from zero at the 5 percent level (using a one-tailed test).

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Segmental Reporting and Risk Reduction: The Hong Kong Experience

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Key words: Contextual analysis of accounting; Information needs of investors; Risk; Segmental reporting

Abstract: *This study assesses the applicability of segmental reporting to Hong Kong by examining the possible risk reduction to investors. The statistical results show that segmental reporting does not reduce the risk significantly to Hong Kong investors. Moreover, the contextual analysis shows that the present environment of Hong Kong does not urgently need segmental reporting practices.*

Segmental reporting is the disaggregation of information of a business undertaking by ways of geographical areas or lines of business (LOB). As companies expand their businesses in different countries and by diversifying their activities, the profitability and risk of different businesses may be drastically different. In order to provide more precise information of individual lines of business and geographical segments for the users of financial statements, the need for segmental reporting may be considered. In addition, mergers and acquisitions also contribute to the need for segmental reporting because the financial information of pre-combined companies may be concealed in consolidated financial statements. Advocates for segmental reporting suggest that segmented information gives a better basis for financial analysis. Thus, users will have better information for decision making and thus reduce risk. On the other hand, opponents consider such disclosure a waste of companies' resources and competitively disadvantageous.

In the United States, the Financial Accounting Standards Board (FASB) issued a standard for segmental reporting in 1976 which states clearly the framework for disclosure. In the United Kingdom, segmental disclosure has been governed by the Companies Act and the London Stock Exchange Listing Agreement, and 1990 an accounting standard for segmental reporting was issued. Other countries, such as Canada and Australia, have professional standards on the same topic.

Hong Kong is an international financial center. In Hong Kong, segmental disclosure is governed by the Securities (Stock Exchange Listing) Rules 1986. It only requires segmental disclosure in the directors' report attached to the annual financial statements of listed companies. There is no professional standard for this issue. The objective of this study is to determine whether segmental reporting is beneficial to investors in the Hong Kong context, especially in terms of reduced risk expectation of the investments.

Prior Studies

One major argument for segmental reporting is risk reduction in investment decisions. Dupnik and Rolfe (1990) reported that "the level of aggregation of geographic areas can be relevant to financial analysts in assessing the risk of investing in a company with foreign operations".¹ Prodhan and Harris (1989) investigated the impact of geographically segmental disclosure on the systematic risk of a group of US multinationals quoted on the New York Stock Exchange during the period 1968–1984. Prodhan and Harris (1989) indicated that since the risk–return opportunities could vary in different countries and the international corporations might vary in their abilities to organize the firms' resources efficiently, the disclosure of geographically segmented sales and profits data might alter the firms' systematic risk profiles:

Benefits from corporate international diversification by multinational firms might not always be apparent unless the geographical spread is disclosed to investors. In the context of geographical disclosure, if there is no way for investors to learn about firms' geographical spread of business across countries then all firms could be perceived as being of equal risk.²

Prodhan and Harris (1989) also noted that

disaggregation results in finer information leading to a better understanding of the past and improved forecast for the future. For the disclosing group as a whole this results in lower stock price volatility, hence lower variance of stock prices.³

Prodhan and Harris (1989) concluded that segmental disclosure reduces uncertainty so as to result in lower cost of capital to the disclosing group of firms, when compared with the non-disclosing group.

The risk reduction effect was again supported by Collins and Simonds (1979). They used a large sample and different empirical techniques to study what effect, if any, the initiation of Securities and Exchange Commission's LOB disclosure requirements had on investors' assessments of the riskiness of multisegment firms. Their study showed a strong indication of a negative portfolio-level beta shift occurring at or approximately the time of passage of LOB regulations that LOB disclosure reflected reduced investors' uncertainty of the operations of multisegment firms.

Collins and Simonds (1979) noted the arguments that

price dispersion is a manifestation and, indeed, it is a measure of ignorance in the market. Adequate disclosure of information minimizes ignorance in the market and causes the market price to reflect the "true" intrinsic value of the security; consequently, the price dispersion is narrowed down.⁴

They showed that

predictions of future earnings were facilitated by the availability of segment data and that those firms voluntarily disclosing subentity data exhibited lower weekly stock price variability over time than firms not providing such information.⁵

Another controversial issue concerning segmental reporting and risk reduction is the enhancement of predictive ability through disaggregation. Hopwood et al. (1982) derived the conditions under which the disaggregation of entity earnings into subentity earnings could lead to gains in predicting annual earnings before extraordinary items and discontinued operations.⁶ Balakrishnan et al. (1990) found that geographical segment data enhance predictive ability for annual income and sales. They reported that "providing segment data in interim reports and updating forecasts as macro-economic factors changed should enhance the predictive usefulness of geographical segment disclosures".⁷

In summary, a segmental reporting requirement has been adopted as an accounting standard in various countries. In general, the stated objective of segmental disclosure is to provide investors with information useful in assessing the earnings potential and the risk of firms involved in divergent areas of economic activity. The next section will report the empirical tests of such association between segmental disclosure and the systematic market risk of listed companies in the Hong Kong context.

Hypotheses

While the impact of segmental disclosure has been investigated by many researchers in other countries, this has not been the case in Hong Kong. This study investigates the impact of segmental disclosure on the systematic risk of a group of listed companies quoted on the Hong Kong Stock Exchange during the period from 1983 to 1990.

In an efficient market, more precise information is likely to be reflected in the stock prices, resulting in lower stock price volatility, and hence a lower variance of stock prices as well as systematic risk for the disclosing companies. This implies one possible benefit of segmental disclosure to be a reduction in the uncertainty of the rates of return from investments. This can be examined in the context of the capital market.

If it can be shown that, other things being unchanged, segmental disclosure and systematic risk are associated, then it is possible to conclude that segmental data have information content. If it can be further shown that the direction of beta change favors disclosure behavior (i.e., segmental disclosure has resulted in a lower beta), then it can be concluded that segmental disclosure reduces systematic risk for disclosing companies.

Therefore, two hypotheses for this study are developed:

- (1) Regarding information content, segmental disclosure affects systematic risk.
- (2) Regarding disclosure benefit, segmental disclosure is associated with a lower systematic risk for the disclosing companies.

Methodology

The objective of this study is to investigate the impact of segmental disclosure on the systematic risk of Hong Kong listed companies. For this purpose, companies selected should have either substantial overseas sales (defined as greater than or

equal to 10% of the total sales) or diversified lines of business (defined as greater than or equal to three types of business segments) disclosed in their financial statements. Moreover, since the purpose is to examine the risk characteristics of these companies, there must be a reasonable length of time over which the segmental data and the listings on the Hong Kong Unified Stock Exchange are available continuously throughout the period under investigation.

The following criteria are used to define the appropriate database for this study:

(1) *A common year end to avoid seasonality.* The selected companies must have a common year end. Otherwise, distortions can result from seasonality. Among the 304 listed companies in Hong Kong, many different financial year closing dates exist. The most popular one is December 31. Therefore, December 31 was chosen as the common year end for this study. Of the 304 listed companies, 88 have their financial year end on December 31.

(2) *Continuous stock price listing.* To investigate the risk characteristics of the listed companies, both the individual stock prices and the aggregate market value are required. Of the 88 selected companies, only 30 were listed on the Hong Kong Stock Exchange in June 1983 and continuously listed to June 1990. The rest either came to the market within the test period or discontinued their listings before June 1990. They were not included in the final sample for this study.

Market value figures at the end of each month for 85 months from June 1983 to June 1990 were also collected.

(3) *Substantial overseas sales or diversified lines of business.* Segmental disclosure can be important only for those companies with substantial overseas sales and/or diversified lines of business. To ensure substantial overseas sales, it was defined that at least 10 percent of total sales of a selected company in the final sample must be from overseas territories. To ensure diversified lines of business, it was defined that at least three types of business segments must exist. This criterion further reduces the selected sample from 30 to 20 companies.

(4) *Definition of point of impact, control group, and treatment group.* Since the objective of this research study is to investigate the risk impact of segmental reporting, a point of impact had to be defined. December 1986 was chosen as such a point for two reasons: (i) this date is approximately in the middle of the test period, thus the period after as well as before the point of intervention had similar sample sizes; and (ii) the segmental disclosure requirements of Securities (Stock Exchange Listing) Rules 1986 were issued in that year.

Of the 20 surviving companies, (a) six had continuously disclosed segmental data throughout the 85 months, (b) eight had changed from non-disclosure to segmental disclosure in December 1986, and (c) six had changed from non-disclosure to disclosure at a time other than December 1986.

Group (c) was withdrawn from this study to keep the point of impact uniform, leaving a final sample of 14 companies. Group (a), the six continuously disclosing companies, were regarded as the Control Group for this study, while group (b), the eight companies which changed their disclosure practice on December 1986, were considered as the Treatment Group.

Appendix 1 lists the Control Group and Treatment Group companies.

In Hong Kong, the Hang Seng Index is the general index to reflect the market value movements of the stock market. Therefore, to generate the market return, price relatives were computed as follows:

$$R_{mt} = \frac{P_t - P_{t-1}}{P_{t-1}}$$

where R_{mt} is the market return for month t ; P_t is the Hang Seng Index at the end of month t ; and P_{t-1} is the Hang Seng Index at the end of month $t-1$.

Price indices at the end of the month were used. For 85 months' price indices, 84 market returns were obtained. For companies of the final sample, the individual monthly returns were generated as follows:

$$R_{et} = \frac{MC_t - MC_{t-1}}{MC_{t-1}}$$

where R_{et} is the return on the e th stock for month t ; MC_t is the market capitalization at the end of month t ; and MC_{t-1} is the market capitalization at the end of month $t-1$.

The number of monthly returns collected are as follows:

| | | |
|-------------------------|------------|-------------|
| For the market | = 1 × 84 = | 84 |
| For the treatment group | = 8 × 84 = | 672 |
| For the control group | = 6 × 84 = | <u>504</u> |
| | | <u>1260</u> |

Systematic risk indicators, betas, can then be computed by regressing the market returns with company returns for companies in the treatment and control group categories. Systematic risk is typically estimated from the market model (a linear regression of returns on the market index):

$$R_{et} = X_e + B_e R_{mt} + e_{et}$$

where R_{et} is the return on the e th stock for period t ; R_{mt} is the return on the market index for period t ; X_e is the intercept; B_e is the systematic risk indicator; and e_{et} is the "estimation risk."

To examine systematic risk over time, a time series of betas needs to be generated. Moving betas are used – to fit the regression on a short segment of successive observations (i.e., company monthly returns) and to move this segment along the series. The betas for each new segment are computed by first adding a new beta to the observation and dropping one from the beginning of the series.

A "20 items" series has been chosen because a series of a smaller number of items may reduce the reliability. In addition, there must be enough segments on either side of the intervention point in order to measure the change in the regression slope (i.e., betas) over time, so as to judge the intervention effect.

This results in 32 [(84 – 20)/2] moving betas on either side of the intervention time point for each company. The moving betas were then used in the analyses in the following section. Appendix 2 summarizes the methodology of this study.

Analysis

To test the two hypotheses of this study, both the non-parametric test and the parametric test were performed.

Non-parametric Test

The Kolmogorov–Smirnov two-sample test is a non-parametric test to examine whether two independent samples have been drawn from the same population. This test is sensitive to any kind of difference in the distributions from which the two samples were drawn (e.g., differences in mean and dispersion). The test is concerned with the agreement between the two cumulative distributions. If the two samples have in fact been drawn from the same population, then the cumulative distributions of both samples can be expected to be fairly close to each other. On the other hand, if the two samples come from different populations, the cumulative distributions can be expected to be far apart. Table 1 shows that the mean differences between the treatment group and the control group betas are significant at the 5 percent level. Figure 1 shows the cumulative frequencies for the treatment and control groups moving betas used in the Kolmogorov–Smirnov two-sample test. In other words, the treatment and control groups have been drawn from different populations.

Parametric Test

Concerning the parametric test, the intervention analysis was used to test the influence of the intervention variable (i.e., change in disclosure practice) on systematic risk by comparing the pre-intervention betas and the post-intervention betas between the treatment and control groups. The intervention analysis was used to test the two hypotheses of this study.

The first hypothesis was that “segmental disclosure affects systematic risk.” If this hypothesis is true, then the following statements will be true:

Table 1. Kolmogorov–Smirnov two-sample test

| Class intervals | Cumulative frequencies (%) | | |
|-----------------|----------------------------|----------|-------------|
| | B_T | B_C | $B_T - B_C$ |
| 0.71–0.90 | $F_0(x)$ | $S_N(x)$ | D |
| 0.71–0.90 | 0.00 | 13.85 | -13.85 |
| 0.91–1.10 | 12.31 | 53.85 | -41.54 |
| 1.11–1.30 | 44.62 | 100.00 | -55.38 |
| 1.31–1.50 | 92.31 | 100.00 | -7.69 |
| 1.51–1.70 | 96.92 | 100.00 | -3.08 |
| 1.71–1.90 | 100.00 | 100.00 | 0.00 |

$D = \text{maximum } (F_0(x) - S_N(x)) = 55.38\% \text{ or } 0.5538$.

The critical value of D at 5% significance level for large samples is given by:

$1.36[(n_1+n_2)/n_1n_2]^{1/2}$

For $n_1 = n_2 = 65$, we get:

$1.36[(65+65)/(65)(65)]^{1/2} = 0.2386$

Our observed value of $D = 0.5538$ is in excess of this critical value of 0.2386; hence H_0 is rejected at the 5% significance level. That is, there is a 95% chance that the differences between treatment and control group betas are real and not random.

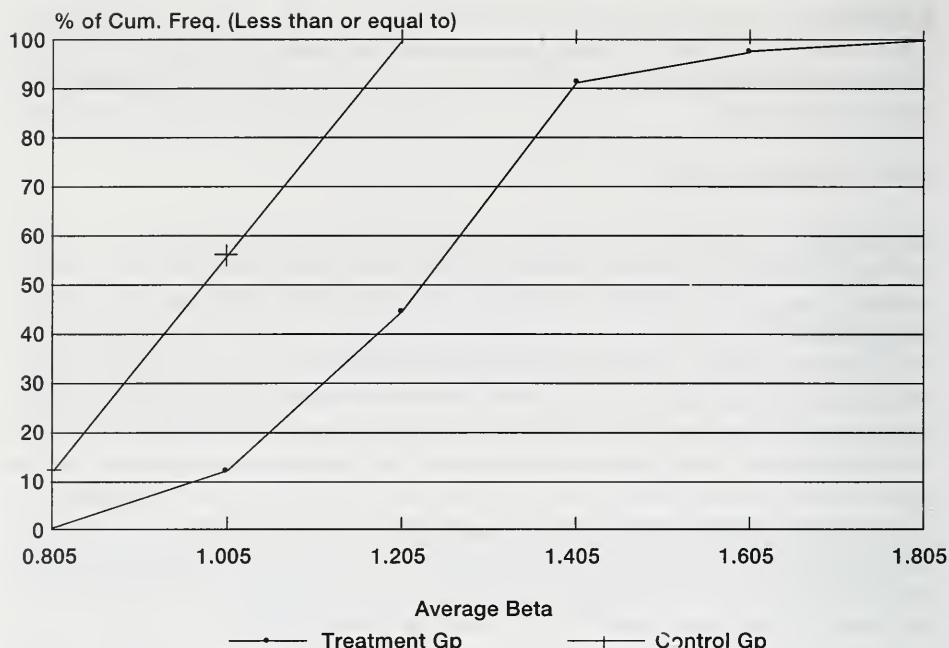


Fig. 1. Kolmogorov-Smirnov two-sample test.

(1) For the treatment group companies, pre-intervention period average betas will be significantly different from post-intervention period average betas, i.e., $B_{T(\text{pre})} >$ or $< B_{T(\text{post})}$.

(2) For the control group companies, pre-intervention period average betas will not be significantly different from post-intervention period average betas, i.e., $B_{c(\text{pre})} = B_{c(\text{post})}$.

The second hypothesis was that "segmental disclosure is associated with a lower systematic risk." If this hypothesis is true, then the following statements will be true:

(1) For the pre-intervention period, average betas for the treatment group will be significantly larger than the average betas for the control group, i.e., $B_{T(\text{pre})} > B_{c(\text{pre})}$.

(2) For the post-intervention period, average betas for the treatment group will not be significantly different from the average betas for the control group, i.e., $B_{T(\text{post})} = B_{c(\text{post})}$.

To test the impact of intervention (i.e., change in disclosure practice) on systematic risk, the time series of betas were subdivided into five different groups on either side of the intervention point for both the treatment and control groups as follows:

(1) Pre-intervention (T_1-T_{32}) was matched by post-intervention ($T_{34}-T_{65}$), with 32 moving average betas on either side of the intervention point (T_{33}).

(2) Pre intervention ($T_{18}-T_{32}$) was matched by post-intervention ($T_{34}-T_{48}$), with 15 moving betas on either side of the intervention point. This can test the more immediate impact on systematic risk.

(3) To prevent an over-reaction by the market participants in the immediate neighborhood of the intervention point, the series (2) above was modified. Pre-intervention ($T_{18}-T_{27}$) was matched by post-intervention ($T_{39}-T_{48}$), resulting in 10 moving betas on either side of the intervention point.

(4) To examine the long-term impact of intervention, the pre-intervention period was defined as T_1-T_{20} and the post-intervention period was defined as $T_{46}-T_{65}$ with 20 moving betas in each.

(5) Assuming no prior knowledge of the imminent change in disclosure practice was available to the market and there is a time lag for the change available to the market, this resulted in $T_{18}-T_{32}$ as the pre-intervention period and $T_{39}-T_{53}$ as the post-intervention period with 15 moving betas in both the pre- and post-intervention periods.

Figure 2 shows the above five series in graphical format.

In each of the five time series, means and standard deviations of pre- and post-intervention series were calculated for both the treatment and control groups. Table 2 shows these means and standard deviations for testing the two hypotheses. Results for testing the first hypothesis that “segmental disclosure affects systematic risk” are shown in Table 3. Results for testing the second hypothesis that “segmental disclosure results in lower systematic risk” are shown in Table 4.

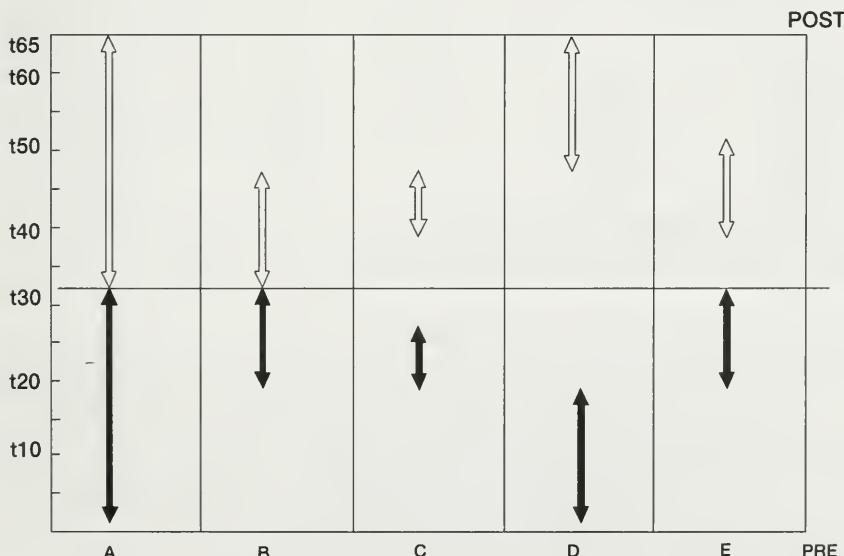


Fig. 2. Defining the pre- and post-intervention series.

Table 2. Treatment and control group betas: Pre- and post-intervention

| | | Treatment group | Control group | | | |
|---|--------------------|-----------------|---------------|--------|--------|----|
| | | Mean | SD | Mean | SD | N |
| A | T ₁₋₃₂ | 1.2638 | 0.2257 | 0.9758 | 0.1255 | 32 |
| | T ₃₄₋₆₅ | 1.3327 | 0.0563 | 1.1921 | 0.0841 | |
| B | T ₁₈₋₃₂ | 1.3385 | 0.1400 | 1.0727 | 0.1172 | 15 |
| | T ₃₄₋₄₈ | 1.3220 | 0.0357 | 1.2690 | 0.0106 | |
| C | T ₁₈₋₂₇ | 1.3614 | 0.1580 | 1.0016 | 0.0745 | 10 |
| | T ₃₉₋₄₈ | 1.3415 | 0.0292 | 1.2742 | 0.0094 | |
| D | T ₁₋₂₀ | 1.2426 | 0.2772 | 0.8939 | 0.0571 | 20 |
| | T ₄₆₋₆₅ | 1.3447 | 0.0646 | 1.1439 | 0.0738 | |
| E | T ₁₈₋₃₂ | 1.3385 | 0.1400 | 1.0727 | 0.1172 | 15 |
| | T ₃₉₋₅₃ | 1.3268 | 0.0538 | 1.2498 | 0.0530 | |

Table 3. Differences between average betas: pre-post

| Series | Calculated <i>t</i> values ^a | | Degrees of freedom (<i>n</i> ₁ + <i>n</i> ₂ -2) | <i>t</i> values from table (5%) |
|--------|---|---------------|---|------------------------------------|
| | Treatment group | Control group | | |
| A | 1.67554 | 8.09925 | 62 | 2.00 |
| B | 0.44230 | 6.46055 | 28 | 2.04 |
| C | 0.39165 | 11.47995 | 18 | 2.10 |
| D | 1.60422 | 11.98187 | 38 | 2.02 |
| E | 0.30213 | 5.33253 | 28 | 2.04 |

^aDetailed computations for *t* values, "pre-post", appear in Appendix 3.

(i) For the treatment group, calculated *t* values are not significant at the 5% level for all series A, B, C, D, and E.

(ii) For the control group, calculated *t* values are significant at the 5% level for all series A, B, C, D, and E.

Table 4. Differences between average betas: treatment-control

| Series | Calculated <i>t</i> values ^a | | Degrees of freedom (<i>n</i> ₁ + <i>n</i> ₂ -2) | <i>t</i> values from table (5%) |
|--------|---|-------------------|---|------------------------------------|
| | Pre-intervention | Post-intervention | | |
| A | 6.30862 | 7.85882 | 62 | 2.00 |
| B | 5.63826 | 5.51197 | 28 | 2.05 |
| C | 6.51343 | 6.93778 | 18 | 2.10 |
| D | 5.50998 | 9.15588 | 38 | 2.02 |
| E | 5.63826 | 3.94883 | 28 | 2.05 |

^aDetailed computations for *t* values, treatment-control appear in Appendix 4.

(i) For the pre-intervention period, calculated *t* values are significant at the 5% level for all series A, B, C, D, and E.

(ii) For the post-intervention period, calculated *t* values are significant at the 5% level for all series A, B, C, D, and E.

To summarize, the four findings from Tables 3 and 4 are:

(1) For the treatment group companies, average betas were not significantly different, at the 95% confidence level, in the pre-intervention period when compared with the post-intervention period in all series, i.e., $B_{T(\text{pre})} = B_{T(\text{post})}$.

(2) For the control group companies, average betas were significantly different, at the 95% confidence level, in the pre-intervention period when compared with the post-intervention period in all series, i.e., $B_{c(\text{pre})} > \text{or} < B_{c(\text{post})}$.

(3) For the pre-intervention period, average betas for the treatment group were significantly larger than the control group average betas, at the 95% confidence level, in all series, i.e., $B_{T(\text{pre})} > B_{c(\text{pre})}$.

(4) For the post-intervention period, average betas for the treatment group were significantly different from the average betas for the control group, at the 95% confidence level, in all series, i.e., $B_{T(post)} >$ or $< B_{c(post)}$.

In other words, the first hypothesis that changes in the segmental disclosure practice were not associated with changes in betas (i.e., systematic risk) is not true.

As the first hypothesis is not true, it is impossible for the second hypothesis to be held true in any circumstance. Although the pre-intervention period average betas for the treatment group were significantly larger than that of the control group (i.e., $B_{T(pre)} > B_{c(pre)}$), the post-intervention period average betas for the treatment group were also significantly larger than that of the control group (i.e., $B_{T(post)} > B_{c(post)}$). It can be concluded that segmental disclosure is not associated with a lower systematic risk and even does not affect systematic risk at all. This result in the Hong Kong context is not consistent with the results of prior studies in other countries.

Discussion

Environment and Accounting Practices

Environmental factors do affect the accounting practices of a country. The relevance of economic and socio-cultural environments to the development of accounting objectives, standards, principles, and practices has been suggested in the literature.

Frank (1979) stated that “if we accept the proposition that the environments in which accounting operates are not the same in different countries or even in different organisations, it stands to reason that accounting must necessarily differ from case to case if it is to retain the sharp cutting edge of social utility.”⁸ This is further supported by Mueller et al. (1987). They noted that if accounting is influenced by its environment, then it is logical to expect accounting similarities among countries with similar business environments.⁹ In the empirical analysis of international accounting principles by Frank (1979), the hypothesis that the cultural and economic environment in a country influences its accounting principles and reporting practices is supported.

A similar line of argument can be found in the Objectives of Financial Reporting by Business Enterprises of the Financial Accounting Standards Board. In paragraph 9 of the statement, it stated that

the objectives set forth stem largely from the needs of those for whom the information is intended, which in turn depend significantly on the nature of the economic activities and decisions with which the users are involved.

Following this line of reasoning, countries with similar economic and socio-cultural environments should have similar accounting practices and those with different environments should have different accounting practices.

Many writers tried to identify the environmental factors which play a major role in explaining the nature of accounting concepts and practices. Mueller (1968) identified 12 environmental conditions.¹⁰ The report of the International Accounting Committee of the American Accounting Association in 1977 developed five categories of socio-economic factors characterizing countries to relate the socio-economic factors to

various accounts and financial data.¹¹ Gray et al. (1984) suggested seven variables that are believed to have impact on the accounting development of a particular country. They are: (1) management, (2) government, (3) accounting profession, (4) stock exchanges, (5) international influences, (6) users of financial statements, and (7) financial press.¹²

After considering the various variables proposed by different writers, three factors are regrouped for the Hong Kong context to explain the earlier statistical results of this study: (1) the size and complexity of business firms; (2) the nature and degree of public ownership of business enterprises; and (3) the needs of investors.

The Size and Complexity of Business Firms

The increase in size and complexity of business firms implies that traditional disclosure requirements become insufficient to enable users of financial statements to evaluate the performance of enterprises. Diversification in geographical markets or by lines of business increases the complexity. This causes the disclosure of information concerning the geographical markets or lines of business to be important.

In the United States and the United Kingdom, many multinational companies diversify their businesses in different industries and different countries with various degrees and types of risk, profitability, rate of return, and growth opportunities.

Hong Kong does not have many giant multinational companies. Companies in Hong Kong are normally small in scale and mainly local. Larger companies in Hong Kong may establish subsidiary companies for different types of businesses. The subsidiaries may be listed on the Hong Kong Stock Exchange under their own names. This implies that listed companies in Hong Kong tend to specialize in specific lines of business. Therefore, companies in Hong Kong are rather small in size and not as complex as those in countries having segmental disclosure requirements.

The Nature and Degree of Public Ownership of Business Enterprises

In a market economy with separation of management from ownership, financial statements become the means to assess the management's stewardship function. The more diffused the ownership, the more important the disclosure or information in financial statements.

The economies of the United States, the United Kingdom, and Hong Kong are all market economies. However, the degree of public ownership in the former two countries is more diffused than in Hong Kong. Few Hong Kong listed companies are really diffused as to the ownership. Normally a few key owners control a company.

Segmented information in the annual reports of Hong Kong companies usually comprises brief analyses of few profit and loss account items. Their information content is meager. In many other countries, segmented information includes many profit and loss account items for each segment, and a more valuable interpretation can be generated from this information. There is also no significant correlation in Hong Kong between market systematic risk and accounting information given by the listed companies in general.

The Needs of Investors

The needs of investors are influenced by the types they represent and the intentions they have. There are broadly two types of investors: institutional investors and individual investors. Chang and Most (1981) suggested that financial analysts and institutional investors were homogeneous in respect of their investment activities, personal characteristics, education, and training background.¹³

The information needs of institutional and individual investors are different because of their different levels of sophistication. Baker and Haslem (1973) suggested that the information needs of individual investors were related to future expectations provided in the financial statements¹⁴ whereas Chandra (1975) suggested that the information needs of security analysts were not related to the projections and forecasts provided in corporate annual reports¹⁵ because the security analysts are usually sophisticated enough to develop their own projections based on past data.

The intentions of investors can be considered speculative, long term, or a mixture of both. Most investors in Hong Kong are quite speculative.¹⁶ Compared with the United States and the United Kingdom, Hong Kong has many individual investors. In those countries, most individual investors can only participate indirectly in the stock market through investing in funds or trusts. In Hong Kong, individual investors can easily participate directly in the stock market because of the large number of individual stockbrokers.

In conclusion, investors in Hong Kong are less sophisticated than those in countries adopting segmental reporting. Although there are some sophisticated investors in Hong Kong, most of them are quite speculative. Since the segmented information in the annual reports are only published once a year, investors do not use them for speculative decisions.

As it is meaningless to include some information in the financial statements unless the investors are willing and able to use them, there seems to be no current need for segmented information for the Hong Kong investors.

Final Remarks

To conclude, although Hong Kong does have its accounting practices shaped by the UK model, in the present situation it is still not vital to adopt segmental reporting. However, with the continuous economic development in Hong Kong, the need for segmental reporting may be much more substantial in the future. At present, there is a lack of strong evidence to support the statement that the Hong Kong environment is similar to that of the countries adopting segmental reporting.

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Appendix 1.

Treatment Group (Eight Companies)

| Company no. | Name |
|-------------|-------------------------------------|
| T1 | Wing On Co. Ltd. |
| T2 | Lam Soon (HK) Ltd. |
| T3 | Liu Chong Hing Investment Ltd. |
| T4 | Hong Kong Ferry (Holdings) Co. Ltd. |
| T5 | Tai Sang Land Development Ltd. |
| T6 | Hong Kong and Shanghai Hotel Ltd. |
| T7 | Conic Investment Co. Ltd. |
| T8 | Tak Wing Investment (Holdings) Ltd. |

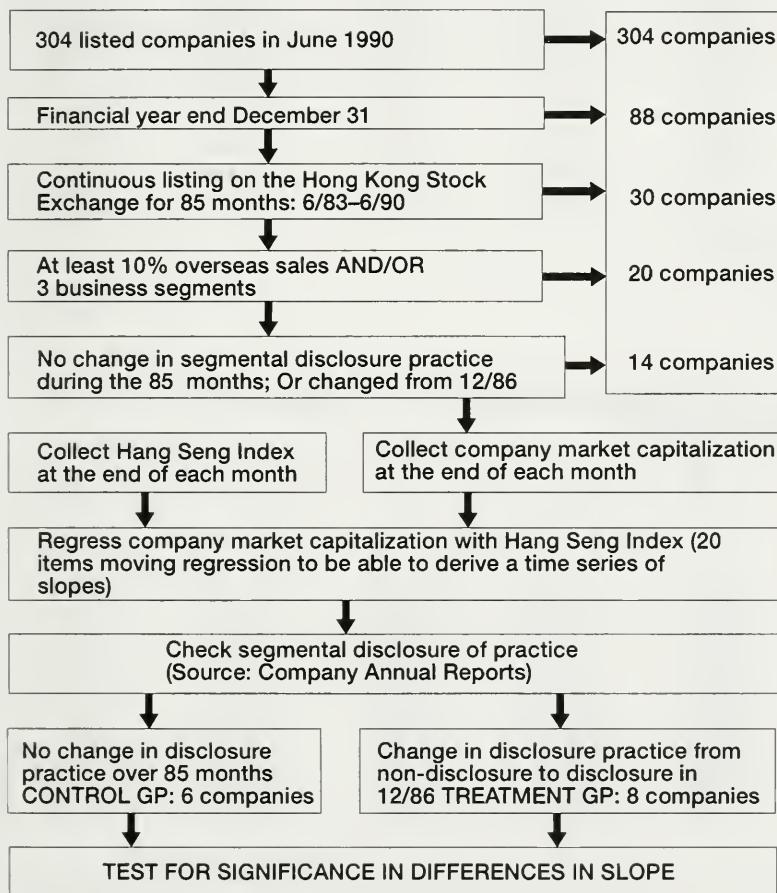
(All these companies changed their disclosure practice starting December 1986, from non-disclosure to disclosure of segmental information.)

Control Group (Six companies)

| Company no. | Name |
|-------------|---------------------------------------|
| C1 | Lee Hing Development Ltd. |
| C2 | Hutchison Whampoa Ltd. |
| C3 | Jardine Matheson Holdings Ltd. |
| C4 | Swire Pacific Ltd. |
| C5 | Hysan Development Co. Ltd. |
| C6 | Shun Tak Enterprises Corporation Ltd. |

(All these companies made no change in their disclosure practice during the whole of the period under investigation, i.e. July 1983 to June 1990.)

Appendix 2: Methodology



Appendix 3: Differences Between Average Betas: “Pre–Post”

| Series | A | B | C | D | E |
|------------------------|----------|----------|-----------|-----------|----------|
| $N=n_1=n_2$ | 32 | 15 | 10 | 20 | 15 |
| <i>Treatment Group</i> | | | | | |
| x_1 | 1.26380 | 1.33850 | 1.36140 | 1.24260 | 1.33850 |
| x_2 | 1.33270 | 1.32200 | 1.34150 | 1.34470 | 1.32680 |
| s_1 | 0.22570 | 0.14000 | 0.15800 | 0.27720 | 0.14000 |
| s_2 | 0.05630 | 0.03570 | 0.02920 | 0.06460 | 0.05380 |
| $a: x_1-x_2$ | -0.06890 | 0.01650 | 0.01990 | -0.10210 | 0.01170 |
| $b: (s_1)^2$ | 0.05094 | 0.01960 | 0.02496 | 0.07684 | 0.01960 |
| $c: (s_2)^2$ | 0.00317 | 0.00127 | 0.00085 | 0.00417 | 0.00289 |
| $d: (b+c)/N$ | 0.00169 | 0.00139 | 0.00258 | 0.00405 | 0.00150 |
| $e: d^{1/2}$ | 0.04112 | 0.03730 | 0.05081 | 0.06364 | 0.03873 |
| $t: a/e$ | -1.67554 | 0.44230 | 0.39165 | -1.60422 | 0.30213 |
| <i>Control group</i> | | | | | |
| x_1 | 0.97580 | 1.07270 | 1.00160 | 0.89390 | 1.07270 |
| x_2 | 1.19210 | 1.26900 | 1.27420 | 1.14390 | 1.24980 |
| s_1 | 0.12550 | 0.11720 | 0.07450 | 0.05710 | 0.11720 |
| s_2 | 0.08410 | 0.01060 | 0.00940 | 0.07380 | 0.05300 |
| $a: x_1-x_2$ | -0.21630 | -0.19630 | -0.27260 | -0.25000 | -0.17710 |
| $b: (s_1)^2$ | 0.01575 | 0.01374 | 0.00555 | 0.00326 | 0.01374 |
| $c: (s_2)^2$ | 0.00707 | 0.00011 | 0.00009 | 0.00545 | 0.00281 |
| $d: (b+c)/N$ | 0.00071 | 0.00092 | 0.00056 | 0.00044 | 0.00110 |
| $e: d^{1/2}$ | 0.02671 | 0.03038 | 0.02375 | 0.02086 | 0.03321 |
| $t: a/e$ | -8.09925 | -6.46055 | -11.47995 | -11.98187 | -5.33253 |

x_1 = pre-intervention average betas

x_2 = post-intervention average betas

s_1 = standard deviation of x_1

s_2 = standard deviation of x_2

Appendix 4: Differences Between Average Betas: “Treatment–control”

| Series | A | B | C | D | E |
|-------------------------|---------|---------|---------|---------|---------|
| $N = n_1 = n_2$ | 32 | 15 | 10 | 20 | 15 |
| <i>Pre-intervention</i> | | | | | |
| x_1 | 1.26380 | 1.33850 | 1.36140 | 1.24260 | 1.33850 |
| x_2 | 0.97580 | 1.07270 | 1.00160 | 0.89390 | 1.07270 |
| s_1 | 0.22570 | 0.14000 | 0.15800 | 0.27720 | 0.14000 |
| s_2 | 0.12550 | 0.11720 | 0.07450 | 0.05710 | 0.11720 |
| $a: x_1-x_2$ | 0.28800 | 0.26580 | 0.35980 | 0.34870 | 0.26580 |
| $b: (s_1)^2$ | 0.05094 | 0.01960 | 0.02496 | 0.07684 | 0.01960 |
| $c: (s_2)^2$ | 0.01575 | 0.01374 | 0.00555 | 0.00326 | 0.01374 |
| $d: (b+c)/N$ | 0.00208 | 0.00222 | 0.00305 | 0.00401 | 0.00222 |
| $e: d^{1/2}$ | 0.04565 | 0.04714 | 0.05524 | 0.06329 | 0.04714 |
| $t: a/e$ | 6.30862 | 5.63826 | 6.51343 | 5.50998 | 5.63826 |

continued...

Appendix 4 continued.

| Series | A | B | C | D | E |
|--------------------------|---------|---------|---------|---------|---------|
| $N = n_1 = n_2$ | 32 | 15 | 10 | 20 | 15 |
| <i>Post-intervention</i> | | | | | |
| x_1 | 1.33270 | 1.32200 | 1.34150 | 1.34470 | 1.32680 |
| x_2 | 1.19210 | 1.26900 | 1.27420 | 1.14390 | 1.24980 |
| s_1 | 0.05630 | 0.03570 | 0.02920 | 0.06460 | 0.05380 |
| s_2 | 0.08410 | 0.01060 | 0.00940 | 0.07380 | 0.05300 |
| $a: x_1 - x_2$ | 0.14060 | 0.05300 | 0.06730 | 0.20080 | 0.07700 |
| $b: (s_1)^2$ | 0.00317 | 0.00127 | 0.00085 | 0.00417 | 0.00289 |
| $c: (s_2)^2$ | 0.00707 | 0.00011 | 0.00009 | 0.00545 | 0.00281 |
| $d: (b+c)/N$ | 0.00032 | 0.00009 | 0.00009 | 0.00048 | 0.00038 |
| $e: d^{1/2}$ | 0.01789 | 0.00962 | 0.00970 | 0.02193 | 0.01950 |
| $t: a/e$ | 7.85882 | 5.51197 | 6.93778 | 9.15588 | 3.94883 |

x_1 = treatment group average betas.

x_2 = control group average betas.

s_1 = standard deviation of x_1 .

s_2 = standard deviation of x_2 .

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Corporate Financial Forecast Accuracy: An Australian Study

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Key words: Accuracy; Bias; Forecast; Profit; Prospectus; Revenue

Abstract: *This study provides insight into several aspects of corporate financial forecast accuracy behavior in Australia. The study extends the body of knowledge in this field in several ways. First, due to the institutional context within which the study is conducted, it provides a contrast to previous research dominated by profit forecast disclosures in the United States and United Kingdom. Second, in addition to profit forecast accuracy and bias, revenue forecasts are analyzed. Third, several findings are conspicuously different from earlier studies. Prospectus and related information memoranda of companies listing on the Australian Stock Exchange were sampled. Accuracy of the two most frequently published financial estimates (revenue and net operating profit) was investigated. Estimation bias was analyzed. Three factors of potential influence upon accuracy (industry classification, trading history and forecast interval) were considered. Accuracy levels were low and appear substantially lower than that reported in earlier research and expected by investors. Over estimation bias was statistically significant. Neither revenue nor profit forecast accuracy appeared to be significantly influenced by industry classification. Trading history was found to be influential upon revenue, but not profit, forecast accuracy. A moderate, negative association between accuracy and forecast interval was observed.*

Research into the publication of corporate financial estimates has been conducted for decades. Accuracy analysis, attitudes towards the concept of publication, share price reaction to disclosure, assessment by independent third parties, and the form, content and incidence of disclosure have been the main areas of investigation.¹ The term *prospective financial information* has been adopted by American, Australian, and international accountancy bodies to embrace the wide range of terminology commonly used to describe estimates of future financial performance.² Prospective financial information can vary from general, qualitative indications of future prospects to specific, quantitative estimates.

Justification for research into the accuracy of *quantitative prospective financial information* (QPFI) has been discussed variously in the literature.³ Research interest

emanates primarily from the premise that rational investors will seek data they perceive as helpful in resolving uncertainty of the future prospects of potential investment opportunities. It follows that the extent to which an estimate proves representative of an actual result should be of concern to investors reviewing the appropriateness of inputs to earlier investment decisions. In turn, this review either confirms or alters prior perceptions regarding QPFI integrity and utility for future decision-making. Likewise, key determinants of such representativeness should be of interest to investors.

Much of the research into QPFI accuracy has used UK and/or American data from the 1970s and has generally focused upon the periodic publication of earnings per share estimates by large, established companies. Fewer studies have considered other instances of corporate QPFI disclosure, such as during takeover activities or stock exchange public listing. Yet, it is possible QPFI accuracy will differ among disclosure contexts. For example, it has been suggested that corporate management will try to ensure that profit forecasts disclosed during new share issues underestimate actual results to help maintain a healthy market rating.⁴ Forecasts made during takeover bids are governed by different forces. Takeovers involve more emotive issues and conflict between opposing parties and are more likely to result in management overstating profits. Further, an estimation of a company's future financial results is likely to be more difficult during a growth or rationalization phase because of factors inherent in the decision to expand or alter operations (for example, new markets and cost structures).

Over recent years, the incidence of voluntary QPFI disclosure in prospectus-type documents (*listing documents*) of firms seeking Australian Stock Exchange listing has grown, albeit slowly. Whilst representing a significant departure from previously more conservative publication practices in that country, such disclosure is still in its infancy and a formalised QPFI accounting and audit framework has yet to be developed.⁵ This is in contrast to other nations (notably the United States) where comprehensive guidance has been available since the mid-1980s.⁶

Although the Australian database of prospectus QPFI is modest relative to other countries, opportunities now exist to investigate QPFI within this developing institutional setting. One sector conspicuous for its increased incidence of prospectus-related QPFI disclosure has been the second board of the Australian Stock Exchange. The second board can be regarded as the counterpart to the Unlisted Securities Market in the United Kingdom, Second Section in Japan, and other second-order security markets in Europe and the United States. In 1992, the second board merged with the main board of the Australian Stock Exchange. The primary objectives of this paper are to provide insight into Australian QPFI accuracy behavior and gauge the degree to which such QPFI reflects the future results they purport to represent. It is not within the scope of the paper to demonstrate whether the QPFI accuracy in this study is unequivocally congruous to the different disclosure contexts of earlier studies or to that expected by investors. Nevertheless, comparison with other research does suggest QPFI accuracy behavior is not generalizable across disclosure media and, at least in the case of second board disclosures, incongruous to investor expectations.

Several studies have analyzed the accuracy of QPFI disclosed in corporate listing documents, yet within other institutional settings.⁷ Dev and Webb investigated

prospectus forecasts of pre-tax net profit by UK companies seeking stock exchange listing and used parametric, bivariate analyzes to consider year of forecast, wording of forecast, industry type, issuing house, and share issue type as possible influences upon accuracy. Ferris and Hayes studied determinants of accuracy for profit estimates disclosed in UK company prospectuses from 1970 to 1973 and used a multivariate technique to investigate the effects of firm size, economic conditions, and forecast interval upon accuracy. Goodwin sampled listing document disclosures of dividend and profit forecasts for companies listing on the *main* board of the Australian Stock Exchange during the 1982–1986 period, investigating industry and forecast interval effects upon accuracy using bivariate analysis.⁸ Mak used parametric multiple regression to examine the effects of firm size, industry, forecast interval, operating history, and change in economic conditions upon the accuracy of profit forecasts disclosed in prospectuses of New Zealand Stock Exchange equity listings for the 1983–1987 period. Keasey and McGuinness used multiple regression to study the influence of equity retention, advising agent, forecast interval, specific risk (industry, “age”, and size), and gross domestic profit (GDP) upon prospectus profit forecasts relating to floats on the UK Unlisted Securities Market over 1984–1986.

Due to different disclosure contexts, variables analyzed, classification methods and statistical techniques, these other studies are distinguished from this one. Further, due to their contrasting and often opposing results (see Results section of this paper), generalizations regarding any “intrinsic” features of QPFI accuracy seem practically impossible to formulate.

Hypotheses

In addition to describing the accuracy of Second Board QPFI disclosures generally, several hypotheses concerning the character of accuracy were investigated. The first hypothesis (H1) concerned estimation bias. Dev and Webb suggested that estimates in prospectuses will be underestimated purposely to help avoid “a loss of status which could adversely affect the longer run reputation of the company and, maybe, its advisors”.⁹ Nevertheless, management could deliberately overestimate financial results to ensure sufficient investor interest in the listing. Thus a non-directional hypothesis was considered appropriate:

H1₀: There is equal likelihood of financial result overestimation and underestimation.
H1₁: The likelihood of overestimation and underestimation is different.

Intuitively, some industry groups could exhibit greater QPFI accuracy than others. For example, some industries could possess more loosely defined cost and marketing structures than others, thereby limiting QPFI accuracy. Comparisons with prior QPFI studies in this context are difficult to make. Industry classifications differ, statistical analyzes vary and conclusions have been mixed.¹⁰ Dev and Webb observed differences in forecast error variability among industries but this does not necessarily imply different error distribution “location”. Goodwin reported a statistically significant relationship between industry type and forecast accuracy, whereas Mak, and Keasey

and McGuinness, observed no relationship. The inconsistency of results provided no basis upon which to help hypothesize the likely direction of association and thus the second hypothesis (H2) was non-directional:

H2₀: QPFI accuracy is not associated with industry classification.

H2₁: QPFI accuracy is associated with industry classification.

Intuitively, the extent of prior trading history should bear upon QPFI accuracy. Market trends, existing cost structures, management systems, markets and contracts are factors which established companies can use when formulating QPFI. In contrast, businesses with limited trading history may be faced with much less predictable trading patterns and therefore may tend to report QPFI with greater error. Research into this aspect of QPFI accuracy is scarce and somewhat ambiguous.¹¹ Mak provided some support for this hypothesis, but Keasey and McGuinness found no relationship. Potentially misleading "age" categorization criteria employed by the two above-mentioned studies limits the conclusiveness of results.¹² A directional hypothesis (H3) was tested:

H3₀: QPFI accuracy is not associated with the extent of trading history.

H3₁: There is a positive association between the level of QPFI accuracy and extent of trading history.

As the time from estimation to occurrence of the actual result diminishes, the estimate should encompass a larger proportion of actual events, and the possibility of unforeseen events will decrease. Consequently, accuracy should increase as the forecast interval decreases. The majority of results from earlier studies support this contention.¹³ Therefore, the fourth hypothesis (H4) was directional:

H4₀: QPFI accuracy is not associated with forecast interval length.

H4₁: There is a negative association between the level of QPFI accuracy and forecast interval length.

Research Method

Sample Selection

A sample was drawn from the Second Board list as at March 31, 1988. Every second listing (alphabetically) was investigated to identify published QPFI. Thus the initial sample represented half the population of Second Board listings at that time. In all, 168 listing documents were sampled and 61 included QPFI.

Estimates of future revenue and two profit measures (net operating profit before tax and net profit after tax) were by far the most common QPFI disclosures. Nevertheless, these items were not included in all 61 disclosures. Further, of those disclosures which included revenue and/or profit estimates, several were eliminated from the analysis because comparison with actual results was not possible, due to either ambiguous data or an altered reporting period. After considering these constraints, 43 estimates of revenue, 38 estimates of net operating profit before tax,

and 41 estimates of net profit after tax formed the usable base for accuracy analysis.¹⁴ There is no reason to suspect the selection process (every second listing) would bias the subsequent accuracy analysis of observable cases. Corresponding actual financial results were obtained from the relevant Annual Report lodged with the Australian Stock Exchange.

Accuracy Determinants and Statistical Analysis

Accuracy was measured by the magnitude of the variation between reported financial result and its estimate, relative to the estimate. The measure, termed the *relative prediction error* is expressed mathematically as:

$$\frac{A - E}{E} \times \frac{100\%}{1} \quad (1)$$

where A = actual financial result; and E = estimated financial result.

The absolute value of this measure was used in much of the analysis, for the magnitude of error, rather than direction, was considered in H2, H3 and H4.

QPFI accuracy for the total sample was investigated first, and possible estimation bias (H1) was analyzed using the binomial test.¹⁵ Then, determinants of accuracy (H2, H3, and H4) were investigated using bivariate non-parametric analysis. Although a multivariate analysis might have provided more information on the interrelationship of variables, bivariate methods nonetheless provide a useful first insight to this Australian disclosure situation. It is to be noted that with the view to employing multivariate methods, preliminary examination of multiple regression residuals using the Shapiro-Wilk test¹⁶ was performed, but indicated underlying distribution assumptions were untenable (for example, normality of dependent variable about any given value of independent variable). Also, population normality assumptions necessary for small-sample bivariate Student t tests were not supported by Shapiro-Wilk tests, due to extreme values. These extreme cases were re-examined for possible data error/anomalies but nothing was found to justify their exclusion. Instead, the non-parametric Mann-Whitney U and Kruskal-Wallis one-way analysis of variance of ranks tests were selected to compare subsample prediction error distributions. The non-parametric Spearman rank correlation coefficient was used instead of parametric-based correlation to assess the relationship between forecast interval and accuracy. These non-parametric tests use rank data and so limit the effect of extreme values.¹⁷

Companies were categorized by industry in accordance with stock exchange records. Company age determined by reference to incorporation date was not considered the appropriate surrogate for trading history. Some companies were incorporated close to the date of the listing document (and so might appear "new") but had acquired established businesses. Other "older" companies had conducted research and development activity for several years but had not commenced trading. Thus trading history was defined to be the length of prior trading of the underlying business. As precise interval scale measurement for each case proved difficult, three broader, ordinal measurement categories were used (less than 2 years, 2 to less than 5 years, 5 or more years). Forecast interval refers to the length of time between the date of

the QPFI disclosure and the end of the period to which the estimate related. The date of the QPFI was taken to be the date of the listing document, and the interval measured to the nearest day.

Results

Observed Accuracy

In general, revenue was estimated more accurately than profit (Table I), suggesting a multiplier effect caused through revenue estimation error and the cost structure of each firm. This effect has been discussed in the literature.¹⁸ Profit estimate error distributions were positively skewed, and large mean and standard deviation of errors were reported. Medians indicated that a smaller profit prediction error was more characteristic than that indicated by the mean. Nevertheless, accuracy was still low. Less than 8 percent of cases reported an actual profit within 10 percent of the estimate and more than half deviated by over 100 percent.

Although rigorous comparison with earlier studies is generally impossible due to lack of appropriate data,¹⁹ there is some evidence to suggest that the level of accuracy observed here is lower than that noted in other institutional contexts involving new share listings. Mak's New Zealand study of 111 profit forecasts reported a mean absolute prediction error of 100 percent and standard deviation of 111 percent.²⁰ Using two-sample parametric tests for population mean differences, a statistically significant difference was found between the forecast errors in Mak's study and those in the present study ($Z = 1.82$). Likewise, the mean absolute error and standard deviations (11 percent and 16 percent respectively) from Keasey and McGuinness's study of 122 forecasts²¹ are of a magnitude significantly different from the present study ($Z = 2.69$).

Table 1. Accuracy: Total sample

| Accuracy statistics | Relative prediction error (RPE) | | Absolute RPE (ARPE) | |
|-------------------------------------|---------------------------------|----------------------|---------------------|----------------------|
| | Revenue | Net operating profit | Revenue | Net operating profit |
| Sample size (<i>n</i>) | 43 | 38 | 43 | 38 |
| Mean error (%) | -27 | -282 | 38 | 289 |
| Median error (%) | -24 | -103 | 37 | 103 |
| Std Deviation (%) | 41 | 642 | 30 | 638 |
| Underestimations | 10 | 3 | | |
| Overestimations | 33 | 35 | NA | NA |
| Binomial test for bias: Z statistic | -3.35* | -5.19* | | |
| Proportion (%) of ARPEs: | | | | |
| ≤ 10% | | | 28 | 8 |
| ≤ 30% | NA | NA | 47 | 16 |
| ≤ 50% | | | 70 | 24 |
| ≤ 100% | | | 100 | 47 |

*Significant at 0.01 level.

NA, not applicable.

Also, in view of recent studies into investor perceptions and use of Second Board QPFI, the large inaccuracy reported here provides strong evidence of quite erroneous expectations on the part of investors regarding likely accuracy.²² Specifically, Hartnett obtained responses from 134 major shareholders of Australian Second Board companies at the time of stock exchange listing (and to whom listing documents were directed). It was found that investors placed importance on obtaining QPFI; about one-third of investors expected a maximum profit forecast prediction error of only 10 percent and two-thirds expected an error not exceeding 30%.

Estimation Bias

Overestimation was evident for revenue and profit estimates (Table 1). $H1_0$ was able to be rejected at the 0.01 significance level. This result is particularly remarkable in being *opposite* to that hypothesized and reported in the studies by Dev and Webb, and Keasey and McGuinness (that of conservative prospectus forecasts and underestimation). Exactly why this should occur (in contrast to *underestimation* reported by others) is yet to be fully understood. One potentially influential factor relates to the less stringent listing requirements for Second Board firms, and also Australian QPFI being subjected to much less independent assessment by reporting accountants and stock exchange authorities, compared with that within the United Kingdom (where the two above-mentioned studies were conducted).

Accuracy and Main Industry Categories

In the first instance, smaller mean absolute errors and standard deviations in the manufacturing–engineering and tourism groups suggested that businesses in these industries were more capable of estimating financial results than others²³ (noting that the magnitude of absolute relative prediction errors (ARPE's) was still reasonably high in all categories). However, skewed distributions limited the usefulness of mean and standard deviation statistics. Inspection of ARPEs was conducted to compare the “location” of ARPEs among industry subgroups, and Kruskal–Wallis tests were performed to assess statistical significance. No conspicuously different error pattern was found. $H2_0$ could not be rejected at conventional significance levels (Table 2). This is consistent with results from Mak's study, but inconsistent with those from Goodwin's study.

Accuracy and Trading History

Regarding revenue estimates, absolute relative prediction errors of companies with limited trading experience were larger and more dispersed than those of the more established companies (Table 3). In all three trading history comparisons relating to revenue forecasts, $H3_0$ was able to be rejected at conventional significance levels.

Unlike revenue forecasts, a firm relationship between profit forecast accuracy and trading history was not apparent. Error *rank* distributions in two of the three comparisons (“less than 5 years/at least 5 years” and “less than 2 years/at least 5 years”) were similar and $H3_0$ was not able to be rejected. $H3_0$ was able to be rejected

Table 2. Accuracy and industry categories

| Accuracy statistics | Industry | Primary prodn. | Other services | Manufact. engineer. | High tech. | Tourism | Other |
|-----------------------------|----------|----------------|----------------|---------------------|------------|---------|-------|
| <i>Revenue</i> | | | | | | | |
| Subsample sizes | | 5 | 5 | 11 | 5 | 4 | 13 |
| ARPE rank sum | | 154.5 | 139 | 212 | 145 | 77 | 218.5 |
| Kruskal–Wallis <i>H</i> | 8.01 | | | | | | |
| <i>Net operating profit</i> | | | | | | | |
| Subsample sizes | | 5 | 5 | 6 | 5 | 5 | 12 |
| ARPE rank sum | | 100.5 | 114 | 131 | 132.5 | 90.5 | 172.5 |
| Kruskall–Wallis <i>H</i> | 5.38 | | | | | | |

Table 3. Accuracy and trading history

| Accuracy statistics | Trading history (years) | | | | | |
|-----------------------------|-------------------------|-------|-------|-----|----------|-------|
| | <2 | ≥2 | <5 | ≥5 | <2 | ≥5 |
| <i>Revenue</i> | | | | | | |
| Subsample sizes | 14 | 29 | 18 | 25 | 14 | 25 |
| ARPE rank sum | 415.5 | 530.5 | 468 | 478 | 367.5 | 412.5 |
| Mann–Whitney <i>U</i> | 310.5*** | | 297** | | 262.5*** | |
| <i>Net operating profit</i> | | | | | | |
| Subsample sizes | 14 | 24 | 18 | 20 | 14 | 20 |
| ARPE rank sum | 318 | 423 | 378 | 363 | 281 | 314 |
| Mann–Whitney <i>U</i> | 213* | | 153 | | 104 | |

*Significant at 0.10; ** 0.05; and *** 0.01 level

in the “less than 2 years/at least 2 years” comparison (Table 3). On balance, trading history appeared of little importance to the determination of profit forecast accuracy. This is consistent with Keasey and McGuinness’ findings, but conflicts with conclusions drawn by Mak.

Accuracy and Forecast Interval

A statistically significant negative association between accuracy and forecast interval was evident (for revenue and profit forecasts) and $H4_0$ was able to be rejected (Table 4). Nevertheless, the correlation was only moderate (strongest correlation coefficient Rs 0.49). The conclusion that accuracy is associated negatively with the length of the forecast interval is consistent with much of the literature pertaining to other QPFI disclosure contexts.²⁴

Conclusions

This study is concerned with the accuracy behavior of quantitative prospective financial information (QPFI) disclosed in Australian Stock Exchange listing documents. High prediction error and statistically significant overestimation bias were observed. These features contrast with those from other institutional settings and suggest a fundamental difference in at least one contextual background characteristic bearing significantly

Table 4. Accuracy and forecast interval: correlation analysis

| | Revenue | Net operating profit |
|---|---------|----------------------|
| Sample sizes | 43 | 38 |
| Spearmans rank correlation coefficient Rs | 0.41 | 0.49 |
| t statistic | 2.91*** | 3.37*** |

*** Significant at 0.01 level.

upon QPFI accuracy. The specific nature of such differences has yet to be determined. Results tend to emphasize the non-generalizability of QPFI accuracy.

For any particular prospectus QPFI disclosure context, critical determinants of accuracy are yet to be identified. In all studies to date, the explanatory power of tested variables has been marginal. In this Australian study, industry classification did not appear influential. Trading history was associated with revenue forecast accuracy, but not profit. Forecast interval was associated with forecast accuracy, but the relationship was not strong. Other potentially important factors can be identified, such as change in economic conditions, year of disclosure, cost structures, financial risk, the underlying rationale of management, and their prediction models. Some have been considered elsewhere in the literature, but to date, none have substantially explained accuracy behavior.²⁵

Another area of concern aroused by the results of this paper is the perceived attributes of QPFI and investor reliance upon such data. The wide disparity between QPFI and actual financial results observed in this study, and the sharp contrast of this disparity with investor expectations, may tend to restrict the potential utility of these financial estimates to something other than that pertaining to numeric accuracy considerations. The resolution of this particular QPFI disclosure issue remains an area for future research.

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8. Different financial performance criteria imposed upon applicants for Main and Second Board Listing will be reflected generally in different company size and/or trading experience. Consequently, QPFI accuracy could differ. Also, QPFI accuracy analysis is extended in the present study with investigation into estimation bias, the effect of trading experience and use of a different forecast error measure.

9. Dev and Webb, ibid., p. 29

10. Dev and Webb, ibid., Goodwin, op. cit., Mak, op. cit., and Keasey and McGuinness, op. cit.

11. Mak, ibid., Keasey and McGuinness, ibid.

12. Mak used company "operating history" and Keasey and McGuinness used company "age." Neither may properly measure the underlying extent of trading history, for new companies seeking exchange listing frequently involve the acquisition of some underlying business which has already traded for several (or many) periods.

13. Dev and Webb, op. cit., Goodwin, op. cit., Mak, op. cit., and Keasey and McGuinness, op. cit. Note Ferris and Hayes, op. cit., concluded the opposite.

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20. Mak, op. cit.

21. Keasey and McGuinness, op cit.

22. Hartnett (1990), op. cit.
23. For brevity in Tables 2 and 3, subgroup mean, median and standard deviation statistics have been omitted. Results pertinent to the (nonparametric) statistical tests performed are tabulated.
24. Dev and Webb, op. cit., Mak, op. cit., Goodwin, op. cit., and Keasey and McGuinness, op. cit. Note Ferris and Hayes, op. cit., concluded the opposite.
25. Multivariate analysis by Ferris and Hayes (ibid.) involved three independent variables and explained only 11.5 percent of accuracy variation from the mean. Mak (ibid.) included five independent variables and explained only 22 percent of accuracy variation. Keasey and McGuinness (ibid.) included 11 variables and explained only 23 percent of accuracy variation.

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Accounting Education and Practice in Thailand: Perceived Problems and Effectiveness of Enhancement Strategies

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Key words: Accounting education; Accounting practice, Thailand

Abstract: *A rising economic nation in South-East Asia, Thailand faces an acute shortage of effective accounting systems, accounting professionals, and accounting educators needed for its economic growth. The objective of this paper is to present evidence relating to the perceptions of accounting educators, governmental accountants, and public accountants on (1) the major problems confronting the accounting profession in Thailand; (2) the effectiveness of Thailand in using various strategies for the enhancement of the accounting education and practice; and (3) the relevance of various functional accounting areas to Thailand. The study is based on a survey of 285 Thai accounting educators and professionals. The results indicate that (1) the country suffers from a lack of adequate number of accounting instructors, dated curriculum and textbooks, and a lack of societal recognition for accountants; (2) Thailand's effectiveness in using some 21 enhancement strategies is poor to average; and (3) perceived relevant accounting areas for Thailand are in the following order: taxation, managerial and cost accounting, financial accounting, auditing, accounting systems, business law, international accounting, social and macro accounting, and governmental accounting. The responses from different subject groups are generally similar. As discussed in the paper, the significant statistical differences in some 40% of the variables studied do not translate into major practical differences.*

Thailand, a rapidly developing country in Asia, has enjoyed a high level of investment from Japan and Taiwan in recent years (*Insight*, 1989). The economic expansion in

Thailand has resulted in a growing demand for both qualified accountants and reliable accounting systems. There is, however, an acute shortage of qualified accountants in the country. The objectives of this paper are to provide perceptual evidence on (1) problems facing the accounting profession in Thailand; (2) the effectiveness of Thailand in using various remedial strategies for the enhancement of the accounting education and practice; and (3) the relevance of various functional accounting areas to Thailand.

The paper is organized as follows: the first section is devoted to background information on the status of accounting education and practice in Thailand. The rationale for the study is described in the second section. This is followed by a description of the research method in the third section. The results are presented next, followed by the summary and conclusion.

Background

Formerly known as Siam, the Kingdom of Thailand has a population of 55 million that is predominantly rural. A highly centralized city, Bangkok is the capital with approximately 6 million people, which makes it 50 times larger than the second largest city. Furthermore, 75 percent of Thailand's commercial and educational institutions are located in the capital. Thai people are considered to be the most ethnically uniform in South-East Asia, all but 5 percent of the population being Thai-speaking Buddhists.

Accounting Education

The first accounting program in Thailand was introduced at Thammasat University in 1938. Currently, there are approximately 30 universities and technical institutes that offer programs in accounting. Two of these universities, Thammasat and Chulalongkorn, also offer graduate programs in accounting. Since 1987, Chulalongkorn has been the only university authorized to grant doctoral degrees in accounting. The Minister of University Affairs oversees all state and private colleges.

Accounting theory and practice in the United States has had a major influence on accounting education in Thailand, perhaps because many of the Thai instructors have completed their graduate studies in the United States. Additionally, Chulalongkorn University has arranged several cooperative programs with American universities such as Northwestern University and the University of Pennsylvania, and has invited visiting professors from the United States to teach and help design graduate programs in business.

Promulgatory and Regulatory Agencies

The principal agencies concerned with regulating accounting practice in Thailand are the Institute of Certified Accountants and Auditors of Thailand (ICAAT), the Board of Audit Supervision, the Ministry of Commerce, and the Securities Exchange of Thailand. The ICAAT was established in 1948 as an independent professional

accounting organization. Its board of directors consists of college professors, licensed auditors, and high-ranking government officials. The ICAAT acts as a promulgatory agency by issuing accounting and auditing standards which are reinforced by the Ministry of Commerce. Through 1991, the ICAAT had issued 16 accounting pronouncements and 31 auditing standards, most of which are based on accounting and auditing standards adopted in the United States. The ICAAT also organizes conventions and seminar series for the general public, and publishes a quarterly journal called *Accountants Journal*. Although membership in the ICAAT is open to the general public, members are predominantly licensed auditors and some university graduates of accounting.

The Board of Audit Supervision (BAS) controls the auditing profession in Thailand as a result of the Auditor Act of 1962. The board is responsible for the issuance, suspension, and revocation of audit licenses. An audit license is gained by passing a comprehensive examination given twice a year by the BAS. The requirements for taking the examination are a baccalaureate degree with an adequate number of accounting courses, a minimum of 20 years of age, Thai nationality, lack of criminal record or insanity, lack of job positions which conflict with the profession, and at least 2000 hours of experience in public accounting within the immediate past 2 years. The audit license is granted if the candidate passes all parts of the examination in one sitting. A candidate who does not pass the examination for two consecutive years, must wait for another year before retaking the examination. In order to maintain an audit license, the individual must uphold the 1968 Code of Ethics (which is similar to the Code of Professional Conduct in the United States), and must perform auditing tasks for at least five companies annually or attend a series of seminars provided by the ICAAT, although qualifying for an audit license does not require membership in the ICAAT. Once granted, the license must be renewed every 5 years.

The Ministry of Commerce and the Securities Exchange of Thailand enforce accounting and auditing standards by requiring that all corporations and registered partnerships maintain proper accounting records and have their financial statements audited by independent licensed auditors on an annual basis. The audited financial statements are submitted to the Revenue Department along with tax returns. Government-owned enterprises are audited by government auditors. The Securities Exchange of Thailand also has instituted requirements for financial statements audits for all listed companies.

The Rationale for This Study

Accounting and auditing have a significant role in providing information for the economic growth of Thailand. Accountability for economic activities along with reliable, timely, and relevant accounting reports are essential for attracting foreign investors. In addition, effective accounting systems are needed to help prevent misdirected economic efforts, waste, and theft. Thus, identification and resolution of accounting educational and practice problems may prove useful for economic development of Thailand.

Several papers (e.g., Holzer and Trembly, 1973; Whittle 1980; Indaravijaya, 1981) have provided information on the status of accounting in Thailand. However, these papers were written in a period before the current rush for economic growth and international investment. Furthermore, the focus of these papers was generally a description of the accounting profession in Thailand, but not the problems it faced or the strategies available to resolve those problems. The objective of this study is to present data concerning problems, strategies, and the relevance of various functional areas of accounting to Thailand. More specifically, this study addresses the following questions:

- (1) What factors are perceived as obstructing the development of accounting education and the accounting profession in Thailand?
- (2) How effectively are various strategies being utilized for the enhancement of accounting education and practice in Thailand?
- (3) What accounting curriculum is relevant to Thailand?

Research Method

A survey of accounting educators and practicing accountants (both governmental and public) in Thailand was conducted to compile the necessary information for this study. The Thai language was used in the survey questionnaire, which was pilot tested with two Thai graduate students at a US university with which one of the authors is affiliated. The students possessed undergraduate degrees in accounting and had practical accounting experience in Thailand (one as an accounting instructor and the other as a junior auditor).

A sample of deans of business schools, partners in public accounting firms, and directors in accounting-related governmental agencies in Bangkok were requested to assist in conducting the survey at their organizations. Two state universities, a private college, two government agencies, and three public accounting firms cooperated. Table 1 presents the number of questionnaires distributed and the responses received.

As Table 1 shows, all governmental accountants sampled responded, while the response rates for educators and public accountants were 54 percent and 52 percent, respectively. Based on the high response rate, we did not send follow-up questionnaires. Consequently, no statement can be made regarding the possibility of a non-response bias for the educators and public accountants. Approximately 7 percent of respondents held associate degrees (i.e., certificates of accounting but not a formal

Table 1. Questionnaires mailed and responses received

| | Mailed | Received | Response rate(%) |
|------------------------|--------|----------|------------------|
| Accounting educators | 78 | 42 | 54 |
| Government accountants | 120 | 120 | 100 |
| Public accountants | 239 | 123 | 52 |
| Overall | 437 | 285 | 65 |

college degree), 71 percent held undergraduate degrees in accounting, and 21 percent held masters degrees. Only one respondent possessed a doctorate degree in accounting.

Results

The responses are analyzed and reported in three major categories described as factors obstructing accounting development, strategies to enhance the accounting profession, and relevant accounting curriculum.

Factors Obstructing Accounting Development

An open-ended section was used to elicit subjects' listing of up to six problems (factors) that they viewed to be either "significant" or "very significant" obstructors to accounting development in Thailand. Table 2 presents the most frequently mentioned factors. The first column presents the factors mentioned. The numbers of respondents who indicated the factors as very significant or significant are presented in the second and third columns, respectively. We have presented these factors under categories of educational and professional factors. If a factor did not qualify under any of these classifications, we present it under the caption "Other factors." No analysis is presented to compare the responses of the three respondent groups because the frequency of responses for factors identified in Table 2 is relatively small, making any comparative statistics dubious.¹

Regarding the educational factors, the responses indicate that (1) the existing accounting curriculum is irrelevant; (2) there is a critical shortage of qualified accounting instructors; and (3) there is a lack of quality accounting textbooks. Some participants indicated that the teaching profession attracts a smaller number of qualified

Table 2. Factors obstructing the development of accounting education and practice in Thailand

| | Very significant | Significant | Total |
|--|------------------|-------------|-------|
| <i>Educational factors</i> | | | |
| 1. Lack of relevant and effective accounting curricula | 18 | 23 | 41 |
| 2. Lack of sufficient qualified instructors | 21 | 15 | 36 |
| 3. Lack of and/or outdated accounting textbooks in Thai language | 15 | 10 | 25 |
| <i>Professional factors</i> | | | |
| 4. Inadequate public understanding of the role of accounting | 44 | 12 | 56 |
| 5. Lack of active professional accounting societies | 18 | 14 | 32 |
| 6. Low status of professional ethics | 18 | 13 | 31 |
| 7. Low status of present accounting publications | 14 | 16 | 30 |
| 8. Low image of accounting profession | 13 | 12 | 25 |
| <i>Other factors</i> | | | |
| 9. Low level of government support | 23 | 17 | 40 |
| 10. Social and cultural influence | 11 | 13 | 24 |

individuals than public accounting or industry. Perhaps this is because of the salary disparity between accounting educators and professional accountants.

With respect to the accounting curriculum, respondents indicated that the content of present accounting programs falls short of the domestic needs. These programs are not flexible and are not adequately up to date to keep pace with the rapidly changing environment. According to the respondents, the present accounting curriculum emphasizes the theoretical frameworks at the expense of practical aspects of accounting.

An insufficient number of accounting textbooks written in the Thai language is also perceived to be a significant problem. Direct translations of books from English to Thai have made many existing textbooks less suitable for the domestic needs. Since the level of English proficiency of most Thai students is generally low, the use of accounting textbook written in English does not seem to be helpful. An urgent need seems to exist for a systematic effort to develop textbooks written in the native language and, thus, suited to the Thai educational needs.

Other educational problems noted by some respondents are the low application of computers in accounting curricula, poor quality of accounting students, and inadequate library resources.

The professional factors presented in Table 2 indicate a dismal picture of the public's recognition of the role of accounting and its benefits. Perhaps a major reason for this is that most commerce in Thailand is characterized by a large number of small and medium-sized family-owned enterprises where there is an owner/manager control environment. Managers, middle managers, and owners of these businesses find accounting difficult to understand. They have very little knowledge about its role and benefits, and they consider accounting necessary only for tax purposes. Accounting information is not considered to be useful for making business decisions, thus the benefits of developing a good accounting system do not seem to justify its cost. However, the influx of foreign investment is rapidly changing the small, owner/manager nature of much business operation in Thailand. This fact indicates the necessity of attention to development of viable accounting standards and systems.

Another reason for this dismal picture may be that a violation of accounting standards is not viewed as a criminal or civil violation and does not carry a heavy penalty, as does breaking the tax law. For this reason, many small businesses tend to ignore accounting standards and prepare their financial statements according to the tax law requirements. Perhaps the perceived lack of relevance of accounting standards to domestic needs is the main reason for low usage of accounting information for decision making. More attention must be given to domestic users' needs and their sophistication level when accounting systems are developed.

According to the respondents, the ICAAT, which operates without a full-time staff, has not played a significant role because it lacks strong and effective leadership. As a result, the Institute and its professional activities have not gained significant recognition and support from the general accounting profession, academe, and the business community. Some respondents expressed concern of the ICAAT's ambiguous accounting and auditing standards, insufficient educational seminars, irrelevance of seminar topics to local needs, high fees for seminars, and the influence of a small group of people on the ICAAT's activities.

Another problem noted by some respondents is the unethical behavior of many accountants and auditors (e.g., compromising accounting and auditing standards for self-benefit). As a result, accounting reports of companies, in particular small businesses are not viewed as credible.

A lack of sufficient number of accounting publications is also perceived to be a major problem. The respondents indicated that the accounting community in general is not well informed about accounting developments. ICAAT's *Accountants Journal* is not widely circulated, thus limiting debates, interactions, and exchange of ideas among accountants.

Other professional problems noted by respondents are lack of cooperation between academics and practitioners, unfairness of the certified accountant examination, and inadequate use of computers in accounting.

Table 2 presents information on two other frequently mentioned factors that are obstructing the development of accounting education and practice in Thailand. One is the lack of government support. Progress in accounting will be achieved through government-supported legal reinforcement of standards. The second problem is concerned with the negative influence of social and cultural factors on the accounting profession. When compared to other professions, the accounting profession is not perceived to be a prestigious profession in Thailand. The major contributing factors are the low usage of accounting information in making business and economic decisions, unsophisticated Thai accounting systems, and questionable behavior of many accountants and auditors. As a result, the accounting profession has not been able to attract a high number of qualified individuals.

Strategies to Enhance the Accounting Profession in Thailand

Respondents were asked to indicate how effectively some 21 strategies are being utilized in enhancing the accounting education and practice in Thailand. The strategies were compiled in a previous study by Novin and Baker (1990) based on a query of accounting professors in the United States with international accounting work experience in developing countries. The following scale was used to collect data from the sample in this study:

- 0 = not effectively
- 1 = least effectively
- 2 = effectively
- 3 = very effectively
- 4 = extremely effectively

The respondents could also select choices of "not applicable in Thailand" or "don't know". In this section, the results are presented for all three respondent groups and statistical differences are noted where significant.

Table 3 presents the results. The 21 strategies listed in a random order in the original questionnaire are organized in two sections to reflect our classification of

Table 3. Effectiveness of Thailand in utilizing various strategies to enhance accounting profession

| | Mean (standard deviation) ^a | | | | |
|---|--|-----------------|-----------------|-----------------|-------|
| | Overall | AE | GA | PA | Sig. |
| <i>Related educational strategies</i> | | | | | |
| 1. Developing accounting textbooks in domestic languages | 2.34 (0.76) | 2.40 (0.93) | 2.39 (0.75) | 2.27 (0.71) | 0.434 |
| 2. Training and upgrading domestic accounting professors | 2.14 (0.81) | 2.03 (1.03) | 2.08 (0.70) | 2.27 (0.75) | 0.233 |
| 3. Raising educational requirements for accounting | 1.99 (0.81) | 1.84 (0.85) | 2.01 (0.87) | 2.02 (0.73) | 0.537 |
| 4. Encouraging profession–university cooperations | 1.97 (1.10) | 1.95 (1.10) | 1.95 (1.33) | 2.00 (0.87) | 0.931 |
| 5. Educating decision makers how to use accounting information for making economic decisions | 1.92 (0.89) | 2.25* (0.78) | 1.81 (1.02) | 1.90 (0.78) | 0.025 |
| 6. Providing practical training to accounting students during their college education | 1.90 (0.94) | 2.19 (0.92) | 1.65* (0.97) | 2.03 (0.87) | 0.001 |
| 7. Educating businessmen about the role and benefits of accounting | 1.86 (0.88) | 2.30 (0.88) | 1.91 (0.89) | 1.67* (0.82) | 0.000 |
| 8. Encouraging accounting students' association activities | 1.64 (0.89) | 1.90 (0.91) | 1.62 (0.94) | 1.58 (0.85) | 0.146 |
| 9. Educating government officials about the role and benefit of accounting for economic development | 1.17 (0.81) | 1.46 (0.79) | 1.16 (0.80) | 1.08 (0.81) | 0.096 |
| <i>Related professional strategies</i> | | | | | |
| 10. Limiting public accounting to certified accountants | 2.57 (1.04) | 2.76 (1.12) | 2.31* (1.09) | 2.75 (0.93) | 0.003 |
| 11. Setting auditing standards | 2.35 (0.93) | 2.68 (0.81) | 2.10* (1.06) | 2.48 (0.77) | 0.000 |
| 12. Having professional accounting examinations and certifications | 2.32 (0.96) | 2.51 (1.12) | 2.33 (0.94) | 2.25 (0.91) | 0.316 |
| 13. Setting accounting standards | 2.29 (0.87) | 2.61 (0.92) | 2.15* (0.92) | 2.33 (0.77) | 0.014 |
| 14. Using computers for processing accounting data | 2.20 (0.89) | 2.12 (0.99) | 2.16 (0.92) | 2.26 (0.83) | 0.567 |
| 15. Setting professional ethics | 2.19 (1.04) | 2.67 (0.81) | 1.90* (1.15) | 2.32 (0.90) | 0.000 |
| 16. Determining information needs of users of accounting reports | 2.19 (0.87) | 2.28 (1.00) | 1.96* (0.88) | 2.37 (0.76) | 0.001 |
| 17. Establishing professional accounting organizations | 2.13 (0.97) | 2.35 (1.03) | 2.03 (1.00) | 2.14 (0.91) | 0.209 |
| 18. Writing accounting standards into law | 1.78 (1.02) | 1.79 (0.88) | 1.94 (1.09) | 1.62 (0.98) | 0.146 |
| 19. Requiring and providing continuing education for accountants after graduation from college | 1.64 (1.11) | 1.97 (0.98) | 1.59 (1.36) | 1.59 (0.88) | 0.213 |
| 20. Determining number of accountants needed by country | 1.60 (0.83) | 1.45 (0.94) | 1.67 (0.88) | 1.58 (0.76) | 0.591 |
| 21. Encouraging participation of accountants in society activities | 1.48 (0.86) | 1.65 (0.89) | 1.45 (0.94) | 1.44 (0.78) | 0.416 |

^a Indicates that the marked group is significantly different from other groups at the 0.05 level.^{*} The response scale is 0 to 4 (not effective to extremely effective).

AE = accounting educator; GA = governmental accountant; PA = public accountant; Sig. = significance.

the strategies into "educational" and "professional" strategies. The overall mean rank (and standard deviation) is given for each strategy followed by the rankings of the three respondent groups. For each of the "educational" and "professional" classifications, the data are organized in descending order by the overall rank column. Thus, the strategies are listed from most effectively used to least effectively used rankings. The closer the mean is to 4, the higher the perceived effectiveness of Thailand in use of the listed strategy

The results indicate that, overall, Thailand is not perceived as being effective in utilizing many of the strategies in our questionnaire for the development of accounting education and practice. In fact, the highest mean rank for educational strategies was only 2.34 for "developing accounting textbooks in domestic language". Similarly, the highest mean overall rank for professional strategies was 2.57, corresponding to "limiting public accounting to certified accountants".

One-way analysis of variance (ANOVA) with post-hoc contrasts was performed to analyze the significance of the differences between groups for each strategy. The final column in Table 3 presents the ANOVA results. For the significant results, the location of difference is identified by an asterisk at the significant group difference. For 13 of the strategies there were no significant statistical differences. However, for 8 strategies, a significant difference was observed between groups at the 0.05 level. It is interesting to note that in all but one of these the mean responses of the governmental accountants were lower than those of the other two groups. Only in strategy number 7, "educating businessmen about the role and benefits of accounting", was the least effective ranking given by public accountants.

Relevant Accounting Curriculum

Enthoven (1981) has suggested that the proper accounting education for developing countries is a combination of business enterprise accounting (i.e., financial, managerial, and cost accounting), governmental accounting, national income accounting (i.e., accounting for national income, assets and debts, balance of payments, etc.), and financial and operational auditing. We asked respondents to indicate the importance of each of these nine accounting functional areas based on their perceptions of the necessity of its inclusion in the accounting curriculum of Thailand. The following scale was used for rating the strategies:

- 0 = not necessary
- 1 = least necessary
- 2 = necessary
- 3 = very necessary
- 4 = extremely necessary
- NA = not applicable in Thailand

The results are presented in Table 4. The overall mean rank (and standard deviation) is given for each accounting area, followed by the rankings by the three experimental groups. The data are organized in descending order by the overall ranking. Thus, the strategies are listed from "extremely necessary" to "not necessary." The closer the

Table 4. Relevance of various accounting areas for Thailand

| Accounting area for teaching | Mean (standard deviation) ^a | | | | |
|--|--|-----------------|----------------|-----------------|-------|
| | Overall | AE | GA | PA | Sig. |
| 1. Taxation | 3.54 (0.66) | 3.62 (0.58) | 3.57 (0.66) | 3.49 (0.70) | 0.435 |
| 2. Managerial and Cost Accounting | 3.42 (0.65) | 3.52 (0.63) | 3.48 (0.62) | 3.33 (0.69) | 0.110 |
| 3. Financial Accounting | 3.31 (0.71) | 3.48 (0.67) | 3.30 (0.67) | 3.26 (0.74) | 0.214 |
| 4. Auditing: Financial and Operational | 3.21 (0.73) | 3.33 (0.69) | 3.42 (0.62) | 2.96* (0.77) | 0.000 |
| 5. Accounting Systems and Procedures | 3.20 (0.76) | 3.29 (0.74) | 3.30 (0.68) | 3.08 (0.83) | 0.065 |
| 6. Business Law | 3.11 (0.80) | 3.19 (0.86) | 3.18 (0.72) | 3.01 (0.86) | 0.189 |
| 7. International Accounting | 2.19 (0.96) | 2.48 (0.83) | 2.36 (0.93) | 1.91* (0.97) | 0.000 |
| 8. Social and Macro Accounting | 2.18 (0.95) | 2.69* (0.81) | 2.13 (0.94) | 2.06 (0.95) | 0.001 |
| 9. Governmental Accounting | 1.90 (0.88) | 2.21 (0.68) | 2.15 (0.86) | 1.55* (0.83) | 0.000 |

* Indicates that the marked group is significantly different from other groups at the 0.05 level.

^a The response scale is 0 – 4 (not necessary to extremely necessary).

AE = accounting educator; GA = government accountant; PA = public accountant; Sig. = significance.

mean is to 4, the higher is the perceived necessity of the accounting area to Thailand. To study the possibility of respondent group differences, the one-way ANOVA and post-hoc paired comparisons were performed, and the model significance is reported in Table 4. The final column in Table 4 presents the ANOVA results. For the significant results, the location of difference is identified by marking the significant group difference with an asterisk.

The overall results indicate that “taxation” was perceived to be the most necessary area of the curriculum and there was no significant difference between the three groups. This is followed by “managerial and cost accounting” with an overall mean ranking of 3.42 and “financial accounting” with a mean rank of 3.31. Again, there was no significant difference between groups. Next are “auditing: financial and operational” (mean rank = 3.21) and “accounting systems and procedures” (mean rank = 3.11). Public accountants had significantly lower rankings for these areas than the other two groups at the 0.05 level. The next area, “business law”, with a mean rank of 3.11, had no significant difference between groups. The remaining areas: “international accounting”, “social and macro accounting”, and “governmental accounting” were perceived to have the lowest level of necessity. However, in all these three areas there was a significant group difference at the 0.05 level: public accountants assessed the level of necessity for these areas at levels lower than the other two groups.

Summary and Conclusions

This paper provides evidence on the perceived underlying problems facing the accounting education and practice in Thailand. The paper also provides perceptual

evidence regarding the effectiveness of Thailand in the use of a number of strategies for enhancing the accounting profession in Thailand. Finally, the subjects in the study provided their perceptions of the degree of necessity of various functional areas of accounting for Thailand. The results indicate a long list of problems facing accounting education and practice in Thailand and indicate that, currently, the 21 strategies investigated are perceived as being no more than moderately effective in enhancing the accounting profession in the country. Interestingly, the subjects assigned the highest weight to the necessity of "taxation", well ahead of financial and managerial and other functional areas of accounting. The weights assigned to international accounting, macro and social accounting, and governmental accounting were at the bottom of the subjects' list.

Another interesting result is that the number of significant differences was relatively small (less than 40%) between the three experimental groups, indicating similarity of their perceptions for 60 percent of responses. Furthermore, many of the statistically significant differences do not indicate practical differences between groups. For example, accounting educators' perceptions of strategy no. 5, "educating decision makers how to use accounting information for making economic decisions" (mean = 2.25), is statistically different from those of the governmental accountants (mean = 1.81) and public accountants (mean = 1.90) at the 0.05 level. Considering that a response of "2" indicates "effective" in the response scale used, it is not clear how mean responses of 2.25, 1.90, and 1.81 could be different in practical terms.

The data presented provide an unfavorable portrait for the accounting profession in Thailand. However, information obtained from respondents suggests recommendations in four areas: (1) relevant accounting education and practice; (2) training and upgrading accounting faculty; (3) closer cooperation between academe and the accounting profession; and (4) an active role by the ICAAT. These comments can be summarized in a number of implications for improving the accounting profession in Thailand as discussed in the next paragraphs.

First, attempts should be made to create more relevant accounting education and practice based on Thailand's environment and users' level of sophistication. Translating foreign accounting textbooks, and professional standards, without adapting them to the domestic needs and the environment is not a useful practice. Accounting practices must be responsive to the financial information needs of the business managers, government planners, and administrators in the country. As Briston (1978) states:

Each country has its own political, social, economic, and cultural characteristics, and it is highly probable that the goals and thus the information needs of the managers of the economy will differ from one country to another. As a consequence, each country should be encouraged not to standardize the structure and specifications of its information system, but to create a system appropriate to its own needs.

In fact, one of the problems identified by the subjects as obstructing the development of accounting in Thailand is the "social and cultural influence" of the Thai society. Recent literature has offered models of the impact of language and culture on the choice of accounting systems (Gray, 1988) and accounting judgment (Belkaoui, 1990). Reviewing this literature, Gray (1988) provides a theory of cultural influence on the development of accounting systems and furnishes a culture-based classification of countries. The discussion of this topic is beyond the scope of this paper and we

do not have any data to offer. Future research is needed to investigate this issue in the context of the Thai culture. For example, researchers could investigate such basic and vital questions as "What are the accounting information needs of Thailand at both micro and macro levels?" "What type of accounting curriculum is needed for Thailand's accounting needs?" "What instructional materials should be used for teaching?" and "What professional standards should be applied given Thailand's social, cultural, and economic specifications?"

Second, the data indicate a perception that Thailand needs to invest heavily in training and upgrading its accounting faculty. Programs to encourage doctoral education and research sabbaticals would enhance accounting educators' world knowledge and research capabilities. Abdolmohammadi (1989) provides a model for such a program. However, we believe it is important that these educators realize that accounting and auditing practices in other countries may not be completely relevant for Thailand. Thus, they should engage in research relevant to the Thai cultural, economic, educational, and professional particularities.

Third, the data indicate a perception that a closer cooperation between the accounting profession and universities should be established. Such cooperation consists of:

- (a) having accounting faculty, government, and private accounting professionals serve as members of an overseeing group such as an accounting advisory committees; and
- (b) inviting accounting practitioners to visit university classrooms and/or participate in student functions to disseminate information about the problems confronting the practice of accounting in Thailand.

The major product of such a cooperation might well be the development of a dynamic accounting program that is geared to the environment of Thailand. Increased cooperation could also result in the establishment of internship programs that would enable students to gain practical experience in accounting to supplement their college education. In addition, accounting professionals might provide the necessary resources for the faculty to conduct relevant research studies for the enhancement of accounting education and practice in Thailand.

Fourth, the data suggest that the ICAAT is not currently taking an effective role for the enhancement of accounting in Thailand. Through the use of a full-time staff (rather than the current form of part-time staff), the ICAAT could become active in the following areas:

- (a) educating the public of the role and benefits of accounting information for decision making;
- (b) providing relevant continuing education seminars for practicing accountants;
- (c) advocating the use of accounting and auditing standards and computers by conducting seminars and conventions;
- (d) initiating, encouraging, and sponsoring accounting research studies relevant to Thailand's needs;
- (e) enhancing the content and distribution of the *Accountants Journal*; and
- (f) providing a means of enforcement of professional ethics.

Fifth, the data indicate that the Thai accounting educators and professionals perceive international accounting at the lowest level of necessity for coverage in an accounting curriculum, and public accountants assessed international accounting at a level that was significantly lower than educators and governmental accountants at the 0.05 level of significance. In our opinion, this perception is not appropriate for a country that is rapidly attracting international investment and international trade. The internationalization of the Thai economy brings with it the need for a reasonable level of coverage of international accounting in a modern accounting curriculum. This issue is now widely recognized in North America and in Europe, where there are directives and recommendations for internationalization of the accounting curriculum. For example, the Accounting Education Change Commission (1990) has recommended the integration of international accounting issues into the accounting curriculum in the United States.

Finally, the results of this study provide a list of accounting problems unique to Thailand with information on various remedial strategies that have not been fully utilized in solving these problems. The findings provide a guide for government officials, accounting administrators, and accounting educators who face the challenge of improving accounting education and enhancing the accounting profession in Thailand. Each of the problems identified and the remedial strategies studied provides a research opportunity for Thai scholars to investigate the issues further and to recommend research-hued courses of action.

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Note

1. In fact, in a battery of 22 χ^2 tests of independence, only one test was significant at the 0.05 level. This indicates a lack of significant difference between the three respondent groups. However, although the total frequencies in Table 2 suggests evidence that the indicated problems exist, we cannot make a definitive statement of lack of group differences due to small group cell sizes.

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Book Reviews

HBJ Miller Comprehensive European Accounting Guide: US. Edition
edited by David Alexander and Simon Archer. Harcourt Brace Jovanovich, London, 1991, 1097 pp., \$65.00.

The guide covers 21 countries, including the former USSR. The countries are classified into three sections: the European Community (EC), other Western European states, and Eastern Europe. There is an introductory section at the beginning of the book, and an appendix, immediately before the index, constitutes the last part of the book. The appendix summarizes the existing International Accounting Standards of the International Accounting Standards Committee. In the preface the editors state that in spite of the diversity in national practices, it is possible now to write a book on “European accounting,” as opposed to a book on “accounting in Europe.” The editors give credit for this evolution to the development of the EC. They view the EC as the driving force behind harmonization not only in the EC member countries but also outside the EC. “European countries outside the EC and hoping to join it or to enjoy a number of the benefits of membership are already aligning changes in their accounting rules with EC requirements.” This is a noteworthy point, and one that is often overlooked.

The title of the book claims it to be a comprehensive guide to European accounting. The editors state that they have “sought to provide the reader not just with an authoritative description of accounting rules and practices in each country, but also an informed understanding of the processes affecting them.” They have succeeded in their attempt to a large extent. For all but a few of the countries included this book provides a wealth of information to accounting researchers, instructors, writers, and practitioners. For students it can be an excellent reference or supplementary text.

The first section of the book entitled “An Overview of European Accounting” is written by the editors. It contains a discussion of topics, such as institutional influences on European accounting, cultural influences on European accounting, the non-European influences, the EC Directives and the harmonization issues. Under cultural influences, the discussion regarding the relative importance of the law and also the influence of taxation is especially insightful and interesting. A five-page table in this section displays an excellent analysis of the International Accounting Standards Committee’s proposals for the *Comparability Project, Exposure Draft 32*. In the

last part of this section, entitled "Towards European Generally Accepted Accounting Principles?", it is obvious to this reviewer that the authors both hope for and expect greater harmonization of accounting principles throughout Europe in the future. This is evident from this statement: "It is to this increase in mutual understanding that this Guide is dedicated."

The second section of the book includes 12 chapters, with each chapter devoted to an EC member country. As is the case in the subsequent two sections that deal with selected non-EC Western European countries and Eastern European countries, each chapter is contributed by one or more authors. This second section is undoubtedly the richest part of the book and truly meets the "comprehensiveness" test. It also makes up the bulk of the book (approximately 680 pages). The contributors in this section are almost equally divided into practitioners (mostly from the Big six) and academicians. The chapter for each country follows a standard format with the exceptions of Italy and Luxembourg. The general format includes these parts: background, the form and content of published financial statements, policies and practices in valuation and income measurement, expected future developments, and specimen financial statements. In the case of Italy, the chapter includes a discussion of the institutes that specify the requirements for financial statements, but does not include the part on valuation and income measurement. The chapter on Luxembourg departs from the standard format by not including a discussion of future developments. One of the strongest features of this book is its inclusion of specimen financial statements. In the section on the EC countries, the specimens include a set of financial statements of actual companies for 10 countries with English translations where the statements were originally published in another language. The two countries for which financial statements of actual companies are not provided are Luxembourg and Spain. In the case of Luxembourg, however, standard formats for a balance sheet and a profit and loss account (income statement) are provided. For Spain, both models of financial statements and a specimen set of financial statements according to the detailed formats required by the 1990 Spanish General Accounting Plan are included. One point needs to be mentioned, however. Within the relatively uniform format, the actual emphasis placed on the discussion of specific topics varies from country to country due to different and sometimes unique operating environments. For example, the chapter on Belgium includes an extensive discussion of Belgian accounting legislation. Each of the chapters includes a discussion of the historical developments of accounting and auditing in the country covered. This provides a good foundation to understand later the evolution of the profession to its present state in each country.

The third section of the book is on "EFTA and 'Independent' Western European Countries." This section includes a separate chapter on Austria, Finland, Sweden, Switzerland and Turkey. The editors acknowledge that the countries included in this section may appear to have little or nothing in common. "However," they state, "if the individual chapters of this section are considered from a slightly more detached viewpoint, then a common thread clearly emerges. This relates to the momentum and direction of change. It is clear that the content and general thrust of the IASC and its work are having and are expected to continue to have significant influence on the thinking and developments in these countries. Perhaps even more important,

however, is the influence of developments *within* the EC. There is a clear tendency in the discussion presented here, and in recent developments and expected future changes, for movement towards the philosophy and practices inherent in the 4th and 7th Directives." A review of the chapters included in this section supports the above assertions made by the editors. The chapters in this section are generally organized using the same format as the chapters in the previous section. This is especially true in the cases of Sweden, Switzerland, and Turkey. The chapter on Austria has detailed discussion of various regulations concerning general accounting, special provisions applicable to corporations, regulations applicable to group accounts (in the case of parent-subsidiary relationships), and regulation concerning the auditing of financial statements. The discussion of the aforementioned regulations includes issues related to the form and content of financial statements and also to the valuation and income measurement. All the chapters in this section include sets of financial statements of actual companies, both in the language in which originally published and also translated into English. Overall, the contents of the chapters in this section are almost as comprehensive as those of chapters in the previous section. Though a bit less detailed, the information is sufficient to provide a good idea of the general accounting policies, principles and practices, and the individual national environments within which the accounting profession operates. As was the case in section two, the contributors to this section are almost equally divided between accounting practitioners and academics.

The fourth section of this book is "Eastern Europe: Overview" and contains four chapters. The countries included are Czechoslovakia, Hungary, Poland and the (former) Union of Soviet Socialist Republics. Ironically, the chapter on the former USSR has four contributors, the maximum number of contributors for any one chapter in the whole book. This is probably the weakest section of the book in terms of comprehensiveness. This is both understandable and, perhaps, unavoidable. The editors seem to be in tune with the rapid changes that have taken place and are still taking place in Eastern Europe. Realizing that this book was published more than two years ago, one would fully agree with the editors' statement, "Two facts rapidly became very obvious to us as we began to assemble the material on Eastern Europe. The first fact is that this is a time of extraordinarily rapid and fascinating change in accounting in Eastern Europe. The second fact, related to the first, is that the task of presenting a concise but clear picture of what is going on is an extremely difficult one." The latter is perhaps an understatement. The editors elaborate that "the countries of Eastern Europe are moving politically and economically away from central control, away from the 'command' type of economy, towards a market-based economy where prices and profits have economic meaning." The editors also explain an important technical point, namely the concept of "funds." The concept of "funds" in a "command" economy is a capital/liability/reserve concept. This represents "the money put in by the state, and has nothing whatsoever to do with the modern concept of funds as a liquidity concept." The editors also acknowledge that the chapters in this section are "diverse in their individual coverage and style. They reflect the personality, background and cultural context of their individual authors." A review of the chapters in this section validates the editors' observations.

In this fourth section, only the chapter on Hungary includes specimens of financial statements of an actual company. For the other three countries (Czechoslovakia,

Poland, and the former USSR) only the format of financial statements is included. For Czechoslovakia the formats of both a balance sheet and a profit and loss account (income statement) are provided, but the heading, erroneously, refers to the balance sheet (p. 940). The chapter on Poland has a very interesting discussion of the 1991 Accounting Reforms (pp. 981-985).

The last section of the book consists of an appendix summarizing the International Accounting Standards Committee's *International Accounting Standards 1-31*, excluding IAS 6.

In summary, this book is a significant and substantive contribution to the international accounting literature. It could be a useful source of information to researchers, writers, practitioners, and educators. Though it would not be suitable as a primary textbook, it could be used as a supplementary text in an international accounting course or a course dealing with comparative accounting systems. For most countries, at least one address is given at the end of the chapter for those who would like to obtain additional information. Considering the large number of contributors to the book, the text is extraordinarily clear and its style quite uniform. This book should be of interest not only to accountants but also to readers in other fields because of the emphasis it places on the historical developments and the operating environment in each country. Given the rich contents and comprehensive coverage, the book is quite reasonably priced.

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Handbook of International Accounting, edited by Frederick D.S. Choi.
John Wiley & Sons, Inc., New York 1991, 30 Chapters, \$105.00.

This comprehensive reference text represents the efforts of a distinguished group of academic and practicing experts from international accounting and business. While focusing primarily on specific international accounting issues, the text also emphasises the interrelationships between international accounting activities, corporate strategy formulations, and capital market regulations. Many of the chapters compare accounting practices of various industrialized countries. The book is primarily designed for use by accountants, financial institutions, financial analysts, and financial statement preparers. Furthermore, this material can serve as a practical guide to recent international developments in the areas of corporate finance, capital markets, financial services, corporate strategy, and performance evaluation. Periodic updates provided to subscribers will likely preserve the timeliness of this edition and enrich the current contributions of the authors.

Numerous topical listings provide the reader with a variety of convenient reference guides throughout the handbook. Detailed tables of content and page references appear at the beginning of each chapter. The inside front cover displays an alphabetical ordering of topic coverage while the inside back cover contains descriptions of acronyms appearing in the text.

Eight major sections group the 30 chapters of this handbook. The first section concentrates on recent international corporate finance, capital market, and financial service developments and their influence on international accounting practice. In Chapter 1, Lessard suggests the establishment of a management contract that combines operating and financial strategies with investor expectations to maximize investor contributions to the global firm. Smith follows with a comparative analysis of the American, European, and Japanese capital market systems and examines possible market influences on international accounting harmonization. The section concludes with Walter presenting a framework for achieving and maintaining competitive advantage in the international financial services industry.

Section two summarizes aspects of international accounting, financial disclosure, and auditing techniques. Peller and Schwitter study conceptual differences prevalent in international accounting for research and development costs, asset revaluation, inventory valuation, lease capitalization, pension accrual, deferred income taxes, and business combinations with foreign currency translations. Saudagaran and Solomon compare accounting principles, financial statement, consolidation, foreign currency translation, and segment reporting financial disclosure requirements for Canada, Germany, Japan, the United Kingdom, and the United States. The highlight of section two must be accorded to the extraordinary compilation of auditing practices across 18 countries documented by Needles, McDermott, and Temkin. Audit issues reviewed includes licensing and reciprocity requirements, the attest function, ethical requirements and enforcement policies, legal liability, independence criteria, audit report specifications, and specific audit procedures. This chapter represents a valuable source of global audit practice information to audit practitioners and academics.

Sections three and four consider effects of international accounting diversity on financial statement users and possible reductions of such diversity through worldwide accounting harmonization. An examination of adjustments employed by investor, corporate, regulatory, and rating entities to cope with international accounting diversity leads Choi and Levich to conclude that rigid accounting harmonization may create capital market *inefficiencies* by concealing national economic differences which directly affect corporate cash flows. Aron supports the ability of international capital markets to adjust for national economic differences through his findings of equivalent Japanese and US earnings per share figures calculated under common US Generally Accepted Accounting Principles (GAAP) guidelines. He concludes that simultaneous differences in Japanese and US stock values reflect real economic consequences emanating from the tax structures of the two countries. The international financial statement analysis chapter by Todd and Sherman reviews traditional trend and profitability investigative methods. Choi furnishes an informative reference of 276 financial databases from 52 countries which are categorized by financial information provided, publisher, geographic coverage area, publication language, update frequency, total reporting firms, and data format.

Hanks begins section four with highlights of recent Securities and Exchange Commission (SEC) efforts to increase international securities trading in the United States. The Chapter details SEC Rule 144A regarding the elimination of registration and holding requirements for the resale of foreign securities to institutional investors. Mueller extensively examines European Community (EC) accounting directives and also supplies some excellent strategic suggestions for practitioners contemplating entry into the EC accounting marketplace. Wyatt profiles the role of the International Accounting Standards Committee (IASC) in harmonizing global accounting principles, especially through its comparability project. Sempier, Chandler, and Dalessio complete section four by extending accounting harmonization developments to audit practice by critiquing the International Federation of Accountants (IFAC) and its relationship with the IASC. The authors also summarise the pronouncements and international audit guidelines that have been issued by IFAC committees.

Section five deals with familiar technical issues in international accounting, with the notable exception of lease accounting. Neuhausen illustrates financial statement valuation differences underlying full and proportionate consolidation, equity, expanded equity, and cost methods of accounting for equity investments. The author also contrasts consolidation practices predominant in the United States, Canada, United Kingdom, EC, Japan, and under International Accounting Standard No. 27. However, the chapter only briefly mentions theoretical differences in pooling, purchase, and push-down accounting techniques. In his overview of foreign currency transaction and translation issues, Harris defines functional currency issues and demonstrates the fundamental economic problems of the temporal translation method under independent subsidiary and parent operating conditions. Wyman supplies a somewhat limited view of international inflation accounting issues by providing an extended discussion of the necessity for inflation adjustments in production, marketing, and financial strategies.

Section five continues with a balanced inspection of international intangible asset recognition, valuation, and amortization issues by Diamond and Nicolaisen. The chapter features the 1990 UK exposure draft on goodwill accounting, along with British specifications for asset valuations of brands. Ratliff attends primarily to American pension accounting standards while only briefly stating pension accounting guidelines for Canada, Australia, and the United Kingdom. The pension chapter does not refer to recent US developments regarding accounting for post-retirement benefits such as employee health insurance premiums. Benjamin and Maurer compare deferred income tax reporting requirements and supply authoritative references for most major developed countries, but this chapter is also in need of an update for new American deferred tax standards. Choi and Singleton close section five with an informative explanation of new international financial instruments and their accounting implications. The authors select a variety of national authoritative sources to present accounting issues surrounding interest rate and hedging swaps, third-party fees for swap arrangements, financial futures, forward rate agreements, currency swaps, and synthetic instruments.

Section six, which encompasses international financial disclosure techniques, commences with a profile by Meek, Colwell, and Peavey of various international reporting requirements for funds statements, earnings per share, multiple year financial

data, management reports and mission statements. Radebaugh highlights international segment reporting practices for the United States, United Kingdom, EC, and International Accounting Standard No. 14. The author cites the need for additional worldwide segment disclosure on financial, governmental, and employee bases while supplying research documenting specific costs and benefits associated with increased segment disclosure. The lack of global social disclosure standards forces Gray and Roberts to conclude section six with a review of employee welfare, value-added, and environmental disclosures on an individual firm basis. The authors forecast that government legislation aimed at satisfying societal information needs will mandate increased social reporting in the future.

Section seven focuses upon strategic planning and budgeting systems within the multinational firm, together with risk management analysis and control techniques. Macharzina presents an overview of several strategic planning devices, such as the Profit Impact of Market Strategies (PIMS) model and portfolio matrix configurations. Lewis extends strategic planning into the formulation of capital budgets and profit plans within the multinational enterprise. The author inserts several budgetary control illustrations, especially regarding the conversion of a foreign subsidiary income statement to US accounting standards with accompanying variance computations. Eiteman advises financial analysts to be aware of significant differences in foreign and domestic accounting principles before proceeding with international capital budgeting computations and discusses numerous accounting adjustment areas. The author concludes with an extensive example of a foreign capital budgeting project analyzed from a subsidiary and parent perspective. Collins suggests a management framework for achieving real profit in hyperinflationary environments through the adjustment of corporate strategies for anticipated inflationary trends and the incorporation of inflationary hedging devices within production, marketing, and financial plans of multinational firms.

The last section of the handbook examines international transfer pricing and taxation issues. Bradley compares transfer pricing regulations for the United States, United Kingdom, Germany, and Japan and suggests several criteria which could be considered in corporate transfer pricing decisions. The author also details the Section 482 White Paper involving US taxation policy towards transfer pricing while disclosing several risk factors which could justify corporate transfer pricing procedures to American tax authorities. Bodner primarily expresses an American perspective in his review of taxation of foreign subsidiary income, foreign tax credits, transfer pricing tax guidelines, and taxation of foreign currency gain and losses. The author provides minimal guidance on other international taxation issues, such as multinational tax planning, and possible effects of international tax treaties, such as the General Agreement on Tariffs and Trade, on international strategic planning.

In conclusion, this handbook represents an invaluable resource to any personal or institutional accounting library. The versatility of this text can be measured through its equivalent value as a reference book for practitioners and an instructional text for international accounting courses. This text could be considered as a primary textbook for graduate-level international accounting courses because of its readability and ongoing informational worth to students who may pursue a career in international accounting practice. Excerpts from the handbook would be excellent supplements

for a number of undergraduate accounting and business courses. Choi should be commended for his logical organization and progression of the text chapters. Handbook authors should be commended for offering their expertise in such a comprehensive and understandable manner.

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Auditing Expectations and Performance in Spain and Britain: A Comparative Analysis

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Key words: Auditing; Audit expectations gap; Role and performance of auditors; Fraud; Public interest responsibilities

Abstract: *Recent attempts to harmonize the regulation of audit services in the European Community and the growing influence of the large multinational audit firms in Europe have not been matched by any significant analysis of the differential practical operation of national auditing systems. This paper seeks to enhance the understanding of such systems by providing a comparative empirical analysis of the nature of audit expectations and perceptions of audit performance in Spain and Britain – two European nations with quite distinctive historical associations with auditing and apparently contrasting expectations of the audit function despite the dominant presence of the same multinational audit firms in both countries. The results of the two national questionnaire surveys do much to confirm such differential positions. Gaps in expectations are observed in both countries between auditors, financial directors, and users of corporate financial statements, but they are of a far less extensive nature in Spain. Key findings to emerge from the analysis include the relatively more favorable ratings received by Spanish auditors on specific public interest issues, such as the detection and prevention of fraud and the narrower, financially orientated perspective of British auditors regarding appropriate audit roles responsibilities; and the questionable basis of claims that audit expectations gaps are “education” gaps rather than “performance” gaps. The paper highlights the need to examine in more depth the basis on which audit expectations are formed, the nature of audit practice in action, and the extent to which such practice is capable of meeting expectations.*

The growing internationalization, and pressures for the harmonization of accounting practices have produced a number of studies examining differences in international accounting practices.¹ International audit practice, though, has not received a similar degree of attention. The few comparative studies that have been undertaken have tended to be largely descriptive documentations of the different legal and professional structures of auditing in various countries² and have not explored in much depth the differential practical operation of national audit systems. Such a situation, however, is not that surprising given that audit research, at a national level, has been criticised for the lack of insight it has provided with respect to the nature and capacity of audit practices.³

Recent initiatives to harmonize the regulation of audit services in the European Community and the observed growing influence of the large multinational audit firms in Europe merely reinforce the need for such development in understanding of the operation of audit systems both nationally and internationally.⁴ This paper seeks to contribute to such a research agenda by providing a comparative analysis of the nature of audit expectations and perceptions of audit performance in Spain and Britain. Audit expectations and the notion of an audit expectations gap have received considerable attention in the last few years in Britain, North America, and Australasia. While it has also begun to be examined by researchers in Continental Europe, in the main it can be argued that the issue of whether audit practice is meeting expectations has yet to receive the attention deserving of the considerable changes that have been taking and are continuing to take place in the provision of European auditing services. This paper attempts to rectify some of this imbalance through its comparison of views on the nature and standard of auditing practice in two European nations with quite distinctive historical associations with auditing.

Britain's lengthy corporate audit tradition dating back to the nineteenth century, its status as the birthplace of many of the largest multinational accountancy firms, and its historical reliance on professional regulation of accounting and auditing practice stand in some contrast to Spain, where, accounting regulations have retained a much more distinctive legalistic character (traditionally following the Continental, as distinct from the Anglo-Saxon model).⁵ Many of the most significant developments in the provision of audit services have come only in the last decade in conjunction with Spain's membership of the EC, the requisite, but enthusiastic, implementation of EC Company Law Directives, and the growing investment by multinational corporations (including multinational accounting firms) in Spain.⁶

The comparison between Spain and Britain is of further interest in that the two countries seem to represent quite polar extremes in terms of audit expectations. In Britain, the audit expectations gap has persistently highlighted the extent to which auditors are not meeting the expectations of recipients of the audit service.⁷ In contrast, in Spain, in both professional, governmental and academic circles, the issue of audit expectations has tended to be discussed in much more positive terms: as a necessary, essential element in the development of a modern democracy; and as a function promising to provide much, rather than something not seen as delivering its promises.⁸ This contrast is made more intriguing given the considerable involvement in Spain of the same multinational accountancy firms whose practices have been regarded as not meeting auditing expectations in Britain.⁹

Views on the nature and performance of auditing in Spain and Britain were obtained from two questionnaire surveys. The results of the surveys do much to confirm such differential positions with respect to audit expectations and perceptions of audit performance. While gaps in expectations are observed in both countries between auditors, financial directors, and users of corporate financial statements, they are far less extensive in Spain. Questions covering a range of issues (such as the role of auditing, the responsibility, regulation, and performance of auditors, and the extent of audit work) almost unanimously produce significant across-group differences in Britain, whereas in Spain such differences occur in a more selective fashion. Further, the ratings given by Spanish financial directors and users concerning the quality of Spanish auditors' performance are generally more favorable than those given by British financial directors and users on the performance of British auditors.

The paper provides a comparative analysis of the observed differences between auditing perspectives in Spain and Britain and reflects on the meaning and significance of emerging patterns and themes. In doing so, the paper raises a number of questions as to the provision of audit services and the construction of audit expectations. Finally, some consideration is given to the implications of the paper's findings for future audit research.

The paper is divided into four main sections. The first outlines the form of the questionnaire surveys conducted in Spain and Britain. The second and third sections analyze the results obtained. The paper concludes with some final reflections on the results and their contribution to understanding of the nature of audit expectations and the notion of an audit expectations gap.

The Questionnaire Survey

The views on auditing in Britain which are analyzed and compared with those in Spain were obtained from a postal questionnaire survey undertaken in Britain in 1990.¹⁰ The questionnaire used in the survey was constructed to provide evidence on the nature of audit expectations, being designed to elicit respondent's views concerning both the role of auditing and the current nature of auditors' performance. In relation to the former, the questionnaire sought responses as to: what the auditor's role should be with respect to audited financial statements and to the audited company; whom the auditor should be legally responsible to; and what prohibitions and regulations should be placed on an audit firm. In terms of the perceived performance of auditors, the questionnaire required respondents to rate auditors' performance on: a series of statements covering common themes in the audit expectations gap literature as to the form and standard of auditing practice; a semantic differential testing instrument containing 19 key auditing activity constructs;¹¹ and six case studies focusing on different elements of the auditors' evidence collection and reporting activities. The final section of the questionnaire contained a series of questions covering personality and biographical details.

In Britain, the questionnaire was distributed to three main groups involved in the corporate financial reporting process, including chartered accountants in public practice, corporate financial directors, and users of financial deposits (including

investment analysts, bankers, and financial journalists). The significant across-group differences obtained provided considerable evidence of an “audit expectations gap”.¹²

The questionnaire, subsequently, was translated into Spanish, retaining its original format but with the questions concerning demographic data being suitably adjusted to reflect the Spanish context. The translated questionnaire was then similarly distributed in Spain in June and July 1992 to auditors, financial directors, and users of corporate financial reports. Details of the distribution of the questionnaire in Britain and Spain and the resultant responses obtained are provided in Table 1.

The overall response rate in Britain was 38.2 percent whilst in Spain it was 15.3 percent. The response rate obtained in Spain, while lower than in Britain, is of an average level for accounting based questionnaire surveys in Spain.¹³

An Overview of Perceptions of Auditing in Britain and Spain

This section and the following section of the paper examine the key differences (and similarities) between the results in Spain and Britain. The initial analysis provides an overview of the respective group responses to each major part of the questionnaire. This is then followed by a more detailed examination of a number of key issues and themes to emerge from the comparative analysis, including: the significance of differential cross-national ratings of auditor performance; the role of the auditor with respect to fraud detection and prevention; issues of public interest responsibilities and audit reporting; the development of regulatory auditing regimes; and the foundations of gaps in audit expectations.

Results tables accompanying the analysis in this section detail the different occupational group means for each of the survey questions. They also show whether the responses of the three occupational groups (auditors, financial directors, and users) in both countries were deemed to be significantly different (at the 5 percent and, where appropriate, the 1 percent level of statistical significance), using the Kruskal-Wallis one way analysis of variance by ranks test.¹⁴ The responses of each of the three occupational groups in Spain were compared with the responses of their counterparts in Britain, with the Wilcoxon-Mann-Whitney test¹⁵ being used to identify significant statistical differences in each of the three pairs of distributions. These results are not detailed in the tables. However, in the analysis that follows, where differences in the national responses of an occupational group are referred to as being significant (e.g., that the views of British auditors were significantly different

Table 1. Response rates

| | Mailed | | Usable replies | | Usable response rates | |
|---|--------|------|----------------|-----|-----------------------|--------|
| | GB | SP | GB | SP | GB (%) | SP (%) |
| Chartered accountants in public practice | 600 | 958 | 272 | 171 | 45.3 | 17.9 |
| Financial directors | 1000 | 706 | 372 | 103 | 37.2 | 14.6 |
| Users | 845 | 1196 | 291 | 162 | 34.4 | 13.6 |
| Total | 2445 | 2860 | 935 | 436 | 38.2 | 15.3 |

from those of Spanish auditors), this means that they were significantly different at the 5 percent level of statistical significance when subjected to the Wilcoxon–Mann–Whitney test.

In overall terms, the results show that the audit expectations gap is of a different form and significance in Spain from that in Britain. The most striking initial finding is the reduced extent of across-group differences in Spain compared to the position in Britain. Using the Kruskal–Wallis test, of 62 questions on the role and nature of the audit and the performance of auditors, in the British survey, 59 showed significant across-group differences (at the 5 percent level of statistical significance). In contrast, in Spain, 38 of the questions produced significant across-group differences. The more extensive scale of across-group differences in Britain is further highlighted by the fact that, at the 1 percent level of statistical significance, 57 of the 62 questions in the British survey showed significant across-group differences compared to only 27 in the Spanish survey.

The smaller number of across-group differences in Spain is accompanied by generally more favorable ratings of auditor performance by financial directors and user groups in Spain compared with their counterparts in Britain. As the following analysis reveals, on key public interest issues such as the prevention and detection of fraud, the quality of audit regulation and the provision of a useful service to society, Spanish auditors received higher ratings than British auditors. Pointedly, one of the few issues where British auditors received a higher success rating than Spanish auditors from the respective national groups of financial directors and users was on the activity of profit making.

Views on the Nature of Audit Practice

Respondents were asked to indicate their degree of agreement or disagreement with 12 statements concerning the current, general nature of auditing practice. The responses are detailed in Table 2.

In Britain all the statements elicited significant across-group differences (at the 5 percent level of significance), while in Spain responses were less polarized with only four of the 12 statements producing such differences. This pattern is well illustrated by the responses to the statement that too much is expected of auditors by the investment community. In Britain, this produced one of the biggest differences in the whole survey (with 76 percent of British auditors agreeing with the statement compared to 41 percent of financial directors and 23 percent of users). In Spain, no significant across-group difference was obtained, with 56 percent of auditors, 47 percent of financial directors, and 52 percent of users agreeing with the statement.

The Spanish responses also reflected a generally more positive view on the part of financial directors and users as to standards of audit performance. For instance, in Britain, while 69 percent of auditors believed that audit quality had increased in recent years, this compared to only 41 percent and 31 percent of financial directors and users, respectively. Contrastingly, in Spain, users (73 percent) and financial directors (63 percent) agreed more than auditors (58 percent) that audit quality had increased. Views in Spain were also more favorable concerning both the protection seen as being provided by audits against fraud and the perceived quality of audit

Table 2. Views on auditors and the auditing process

| | | A | FD | U | Kruskal-Wallis Test |
|---|----|-----|-----|-----|---------------------|
| Quality of co. audits has increased in recent years | SP | 4.7 | 5.0 | 5.0 | — |
| | GB | 4.8 | 4.1 | 3.9 | S* |
| Too much expected of A's by investing community | SP | 4.8 | 4.4 | 4.7 | — |
| | GB | 5.3 | 3.9 | 3.1 | S* |
| A's are too concerned with keeping company management happy | SP | 4.1 | 4.4 | 4.6 | — |
| | GB | 3.8 | 4.1 | 4.9 | S* |
| Auditing process seriously weakened by imprecise accounting standards | SP | 2.6 | 3.0 | 3.2 | S* |
| | GB | 4.0 | 4.2 | 4.6 | S* |
| A's are too willing to settle negligence claims out of court | SP | 4.1 | 4.9 | 4.7 | S* |
| | GB | 3.8 | 4.2 | 4.2 | S |
| An audit is of very little benefit to a company | SP | 2.5 | 2.8 | 2.6 | — |
| | GB | 2.6 | 3.6 | 2.7 | S* |
| Audits generally take too long to complete | SP | 4.3 | 4.5 | 4.2 | — |
| | GB | 2.8 | 4.0 | 4.6 | S* |
| A's do not understand the problems of business | SP | 2.3 | 3.8 | 3.2 | S* |
| | GB | 2.7 | 4.1 | 3.8 | S* |
| Audits provide significant protection against fraud | SP | 4.0 | 4.2 | 4.2 | — |
| | GB | 3.1 | 2.8 | 3.3 | S* |
| A's should be identifying ways to improve management efficiency | SP | 4.8 | 4.6 | 5.0 | — |
| | GB | 5.5 | 4.5 | 5.0 | S* |
| A's should report to shareholders on management efficiency | SP | 3.5 | 3.8 | 4.5 | S* |
| | GB | 3.9 | 3.7 | 4.8 | S* |
| The quality of audit work is adequately regulated by audit profession | SP | 4.8 | 4.5 | 4.4 | S |
| | GB | 4.1 | 3.7 | 3.4 | S* |

Above means based on the seven-point scale: 1 = Strongly disagree, 4 = Neutral, and 7 = Strongly agree.

A = auditor, FD = financial directors, U = users.

S* = across-group difference significant at 1% level of statistical significance.

S = across-group difference significant at 5% level of statistical significance.

— = across-group difference not significant at 5% level of statistical significance.

regulation. For example, with respect to the latter issue, 60 percent of auditors, 53 percent of financial directors and 50 percent of users in Spain agreed that the quality of auditing was being well regulated by the accounting profession, while in Britain 44 percent of auditors and clear minorities of 27 percent of financial directors and 18 percent of users held the same view. Spanish financial directors were also far less divided as to whether the audit is of little benefit to the audited company. Only 19 percent agreed with such a proposition, compared to 41 percent of their British counterparts (user groups in both countries generally disagreed with this proposition).

Spanish responses to the statements in Table 2, however, were not entirely positive or unified as to the state of auditing. Over 40 percent of respondents in each group felt that auditors are too concerned with keeping management happy and take too long to complete audits. There was also a far greater concern in Spain amongst financial directors and users that auditors are too willing to settle negligence claims out of court. Fifty-nine percent of financial directors and 56 percent of users agreed that this was the case, compared with 19 percent of financial directors and 23 percent of users in Britain.

The biggest across-group differences in Spain concerned whether auditors understand business problems (this was the third largest difference in Britain) and whether auditors should report to shareholders on management efficiency (both differences being significant at the 1 percent level of statistical significance). In both countries, financial directors, who probably have the best opportunity to see auditors applying their knowledge of business problems, were the group most sceptical of such knowledge. Fifty percent and 41 percent of British and Spanish financial directors, respectively, agreed that auditors did not understand business problems. Nevertheless, all groups in both countries still supported the view that auditors should be identifying ways to improve management efficiency, although the extent of the auditor's task in this respect was a matter of dispute in that only the two national user groups showed a majority support for auditors to extend their duties to include reporting to shareholders on management efficiency. Auditors and financial directors generally only appeared to favor reporting to management on such issues.

An intriguing set of responses in both Britain and Spain concerned the statement that the auditing process is seriously weakened by imprecise accounting standards. In Britain, both auditor and financial director respondents were evenly divided on the issue (while users generally agreed with the statement). In Spain, the position was more definite, with 73 percent of auditors, 71 percent of financial directors, and 60 percent of users disagreeing with the statement. Such levels of disagreement raise questions as to what auditors are perceived as doing to overcome the flexibility allowed by vague accounting standards.¹⁶

The Role of Company Audits

The questionnaire sought respondents' views as to the auditor's role with respect to companies and their audited financial statements. As in Britain, there were high levels of support and across-group agreement in Spain that audited corporate financial statements should comply with company law, accepted accounting principles, and contain no significant distortions or accidental errors. In both Spain and Britain, the lowest observed occupational group mean for these four audit roles was 6.2 (on a seven-point scale of 1 = strongly disagree, 4 = neutral and 7 = strongly agree).

With regard to the auditor's role in relation to the audited company, all groups in both Spain and Britain generally agreed that it should be to ensure that: all significant fraud is detected; a satisfactory system of internal control is being operated; and the future viability of the company is not in doubt. Variations in the strength of agreement, however, were sufficient to produce significant across-group differences on each statement in Britain and on two of the three statements in Spain (even though the cross-national views of user groups did not differ significantly on these issues). The results are detailed in Table 3.

Opinions were also sought on whether the auditor's role should be to ensure that the future viability of the company is not in doubt and whether the balance sheet gives a fair valuation of the company. These issues have been of some topical interest in Britain given the Auditing Practices Board's recent comments on the role of the audit report¹⁷ and the Accounting Standards Board's discussions on the nature

Table 3. Views of the auditor's role with respect to the audited company

| | A | FD | U | Kruskal-Wallis test |
|--|----------|------------|------------|---------------------|
| <i>The auditor's role should be to ensure that:</i> | | | | |
| all significant fraud is detected | SP GB | 5.1 4.1 | 6.0 4.7 | 6.0 6.0 |
| a satisfactory system of internal control is being operated | SP GB | 6.2 5.6 | 6.2 6.0 | — S* |
| the future viability of the company is not in doubt | SP GB | 5.8 4.7 | 5.4 5.1 | S S* |
| the company is being run efficiently | SP GB | 4.1 3.3 | 4.4 3.9 | S* S* |
| the appropriate regulatory authorities have been informed of any significant malpractice | SP GB | 3.5 4.9 | 4.2 5.1 | S* S* |
| the balance sheet provides a fair valuation of the company | SP GB | 6.3 2.6 | 6.6 4.5 | — S* |

Above means based on the seven-point scale: 1 = Strongly disagree, 4 = Neutral, and 7 = Strongly agree.

A = auditor, FD = financial directors, U = users.

S* = across-group difference significant at 1% level of statistical significance.

S = across-group difference significant at 5% level of statistical significance.

— = across-group difference not significant at 5% level of statistical significance.

of balance sheet valuation.¹⁸ Sixty-two percent of British auditors agreed that the auditor should ensure that the future viability of the company is not in doubt, although they were less supportive than both financial directors (72 percent) and users (80 percent). In contrast in Spain, auditors were the group most supportive of such a role (supported by 81 percent of auditors, 69 percent of directors and 70 percent of users). The issue of whether the balance sheet should provide a fair valuation of the audited company provided an even more distinctive cross-national difference. In Britain, the responses to this statement generated the second largest across-group difference of the survey, with 71 percent of auditors disagreeing with the statement and 58 percent of financial directors and 81 percent of users agreeing with it. In Spain, the issue did not provide a significant across-group difference, with all three groups (91 percent of auditors and 95 percent of both financial directors and users) clearly in agreement with the statement. It is possible that some of the cross-national difference in responses resides in matters of translation. However, the relative similarity of the views of the national user groups and the dissimilarity of the auditor groups (on this issue and on that of corporate viability) does suggest that British auditors have a more restrictive perception of basic audit functions in relation to issues of corporate valuation and viability than their counterparts in Spain (Spanish auditors were significantly more accepting than British auditors of all but one of the possible audit functions in Table 3) or other interested parties in Britain. This is further confirmed by the responses regarding whether the audit should ensure that the company is being managed efficiently. While being one of the least supported functions of all the occupational groups, only British auditors had a majority of respondents (52 percent) disagreeing with such a function. In contrast, just 26 percent of Spanish

auditors and 20 percent of Spanish and British users did not see it as a valid audit function.

Auditor Responsibility

Table 4 details views as to whom the auditor was seen as being responsible if a company's financial statements were significantly misstated and the audit report failed to disclose the true position.

Individually the responses from auditors, financial directors, and users in both countries contained the same ranking of preferences in that all groups agreed most that auditors had a responsibility to existing shareholders, followed by existing creditors, potential shareholders, and potential creditors. However, aside from the auditor's perceived responsibility to existing shareholders (with all groups showing over 89 percent agreement with such a position), there were some important differences in the degree of support for the various forms of auditor responsibility. Again, the views of British auditors appeared particularly distinctive. For instance, a clear majority of respondents in all the other groups (in both countries) believed that auditors had a responsibility to existing and potential creditors and to potential shareholders. British auditors, however, only expressed majority support for a responsibility to existing creditors, with just 32 percent and 27 percent accepting of an audit responsibility to potential shareholders and potential creditors respectively. User groups in Spain and Britain differed little in their responses, both recording high levels of support for auditors to be responsible to shareholders and creditors, both actual and potential (the percentage degree of acceptance ranging from 66 percent to 86 percent). Interestingly, in Spain, financial directors expressed a significantly greater degree of support than users for auditors having a responsibility to potential shareholders (82 percent) and potential creditors (76 percent).

Table 4. Views of the groups to whom auditors should be responsible

"If a company's audited financial statements are significantly misstated and the audit report fails to disclose the true position, to what extent do you agree that the company's auditors *should* have a legal responsibility to the following groups for any loss arising from their reliance on the audited financial statements?"

| | | A | FD | U | Kruskal-Wallis test |
|------------------------|----|-----|-----|-----|---------------------|
| Existing shareholders | SP | 6.2 | 6.5 | 6.3 | — |
| | GB | 6.1 | 6.3 | 6.2 | — |
| Potential shareholders | SP | 5.3 | 5.8 | 5.2 | S |
| | GB | 3.2 | 5.0 | 5.3 | S* |
| Existing creditors | SP | 5.5 | 6.0 | 5.8 | S |
| | GB | 4.4 | 5.6 | 5.9 | S* |
| Potential creditors | SP | 4.6 | 5.5 | 4.9 | S* |
| | GB | 2.9 | 4.6 | 5.2 | S* |

Above means based on the seven-point scale: 1 = Strongly disagree, 4 = Neutral, and 7 = Strongly agree.

A = auditor, FD = financial directors, U = users.

S* = across-group difference significant at 1% level of statistical significance.

S = across-group difference significant at 5% level of statistical significance.

— = across-group difference not significant at 5% level of statistical significance.

The respective responses by financial directors in Britain saw 66 percent recognising the auditor's responsibility to potential shareholders and 56 percent to potential creditors.

Prohibitions and Regulations on the Activities of Audit Firms

The questionnaire contained eight propositions governing the operation and regulation of audit firms. The results are shown in Table 5.

The most striking cross-national difference concerned the statement that an audit firm should not seek primarily to make a profit. In Britain, only 9 percent of auditors, 26 percent of financial directors, and 24 percent of users agreed with such a statement, while in Spain over 50 percent of the respondents in each group held such a view, suggesting a more strongly perceived public welfare responsibility on the part of audit firms. This perception would appear to be further reflected in the respective responses of Spanish and British auditors to the issue of audit firms having limited liability. British auditors were clearly in favor of such a position (67 percent agreeing with it), while Spanish auditors took a more cautious stance (with only 39 percent supporting limited liability).¹⁹ In Spain, the views of auditors regarding limited liability were not significantly different from those of the other two groups. In Britain, however, on this issue (and three other statements in Table 5) a significant across-group difference was obtained because the views of British auditors differed from the statistically similar views of users and financial directors.

Table 5. Views of possible prohibitions and regulations on an audit firm

| | A | FD | U | Kruskal-Wallis test |
|---|----------|------------|------------|----------------------|
| <i>An audit firm should:</i> | | | | |
| prohibit its members from owning shares in its audit clients | SP GB | 6.2 6.7 | 6.2 6.1 | 6.2 5.8 S* |
| not provide management advisory services to its audit clients | SP GB | 3.4 1.6 | 3.7 3.1 | 4.2 3.5 S* |
| not act primarily to make a profit | SP GB | 4.6 1.9 | 4.7 3.3 | 4.7 3.2 S* |
| not be able to earn more than 15% of total income from any one audit client | SP GB | 4.7 6.0 | 4.8 5.4 | 4.7 5.0 S* |
| have a maximum period of office | SP GB | 3.1 2.0 | 4.4 3.6 | 4.4 3.6 S* |
| have its audit methods checked by a professional standards body | SP GB | 6.1 5.3 | 6.4 5.3 | 6.2 5.8 S* |
| have its appointment and fee determined by a body independent of the client | SP GB | 3.8 2.6 | 4.0 2.9 | 4.4 3.5 S* |
| have limited liability determined by statute | SP GB | 4.3 5.2 | 3.6 3.6 | 4.0 3.3 S* |

Above means based on the seven-point scale: 1 = Strongly disagree, 4 = Neutral, and 7 = Strongly agree.

A = auditor, FD = financial directors, U = users.

S* = across-group difference significant at 1% level of statistical significance.

S = across-group difference significant at 5% level of statistical significance.

– = across-group difference not significant at 5% level of statistical significance.

Considerations of Audit Performance

Perceptions of auditor performance were directly assessed by requiring respondents to rate auditors against 19 different performance attributes forming a semantic differential testing instrument.²⁰ The results are shown in Table 6.

Table 6. Views of how successful auditors are at particular activities

| | | A | FD | U | Kruskal-Wallis test |
|--|----|-----|-----|-----|---------------------|
| Diagnosing problems | SP | 5.2 | 4.5 | 4.6 | S* |
| | GB | 5.3 | 4.1 | 4.0 | S* |
| Prescribing remedies to problems | SP | 4.6 | 4.0 | 3.9 | S* |
| | GB | 5.0 | 3.9 | 3.8 | S* |
| Acquiring information | SP | 5.4 | 5.0 | 5.0 | S* |
| | GB | 5.9 | 5.0 | 4.8 | S* |
| Coping with risk and uncertainty | SP | 4.6 | 3.8 | 3.7 | S* |
| | GB | 5.2 | 3.9 | 3.5 | S* |
| Predicting the future | SP | 3.3 | 3.2 | 3.1 | — |
| | GB | 3.5 | 3.0 | 2.9 | S* |
| Publicising their services | SP | 3.1 | 4.3 | 4.2 | S* |
| | GB | 4.3 | 4.9 | 4.3 | S* |
| Making a profit | SP | 4.2 | 5.0 | 4.6 | S* |
| | GB | 5.0 | 6.1 | 5.8 | S* |
| Detecting errors and irregularities | SP | 5.5 | 5.4 | 5.3 | — |
| | GB | 5.1 | 4.4 | 4.3 | S* |
| Preventing errors and irregularities | SP | 5.1 | 4.6 | 4.4 | S* |
| | GB | 4.2 | 3.6 | 3.6 | S* |
| Complying with professional rules | SP | 5.8 | 5.7 | 5.5 | S |
| | GB | 6.0 | 5.8 | 5.5 | S* |
| Enforcing legal requirements | SP | 5.9 | 6.1 | 5.8 | S |
| | GB | 5.5 | 5.5 | 4.9 | S* |
| Forming correct judgments | SP | 5.5 | 5.1 | 4.9 | S* |
| | GB | 5.6 | 4.8 | 4.3 | S* |
| Acting independently without regard to self-interest | SP | 5.6 | 5.1 | 4.6 | S* |
| | GB | 5.7 | 4.5 | 4.1 | S* |
| Communicating effectively | SP | 5.3 | 5.0 | 4.7 | S* |
| | GB | 4.6 | 4.7 | 3.8 | S* |
| Reporting truthfully | SP | 5.5 | 5.2 | 4.9 | S* |
| | GB | 5.9 | 5.4 | 4.9 | S* |
| Being even-handed with the interests of others | SP | 5.8 | 5.2 | 4.8 | S* |
| | GB | 5.6 | 5.0 | 4.1 | S* |
| Limiting their own legal responsibility | SP | 4.8 | 5.1 | 4.9 | — |
| | GB | 3.5 | 5.3 | 5.2 | S* |
| Providing a useful service to clients | SP | 5.7 | 5.2 | 5.2 | S* |
| | GB | 5.5 | 4.6 | 4.7 | S* |
| Providing a useful service to society | SP | 5.7 | 5.2 | 5.1 | S* |
| | GB | 5.1 | 4.2 | 4.0 | S* |

Above means based on the seven-point scale: 1 = Strongly disagree, 4 = Neutral, and 7 = Strongly agree.

A = auditor, FD = financial directors, U = users.

S* = across-group difference significant at 1% level of statistical significance.

S = across-group difference significant at 5% level of statistical significance.

— = across-group difference not significant at 5% level of statistical significance.

In Britain, significant across-group differences were observed on all 19 attributes – differences which were seen as reflecting a clear self-rating performance bias on the part of auditors. In only three instances did auditors rate themselves less highly than financial directors or users, the relevant attributes being the activities of making a profit, publicizing their services and limiting their legal responsibility.

The responses to the Spanish survey revealed some similar tendencies in that significant across-group differences (at the 5 percent level of significance) were observed on 16 of the 19 attributes. Furthermore, on attributes where there were statistically significant differences in ratings, Spanish auditors rated themselves higher than the other two groups on all activities except the above-mentioned profit-related attributes and one other attribute of enforcing legal requirements.

Views on the Extent and Nature of Audit Work

Six case studies, with nine associated questions, were included in the questionnaire as a way of examining respondents' perceptions of the extent and nature of audit work, including the collection of audit evidence, the audit reporting process, and the impact of client pressure on audit practice. In Britain, seven of the nine questions produced significant across-group differences, while in Spain the responses to only four questions were of such a form. Details of the cases are contained in Appendix A. The responses to the associated questions are included in Table 7.

The cases concerning audit reporting covered issues of insider dealing and breaches of public health legislation and sought responses on the respective likelihood of different modes of audit reporting (including direct reporting to regulatory authorities or through the audit report on the company's financial statements). All occupational groups in Britain thought it was more likely that the auditors would report to the regulatory authorities in the case of insider dealing than in the public health case. In Spain, though, the public health issue was the one most likely to be reported to the regulatory authority. The insider dealing case produced a further significant contrast in that all groups in Britain thought that it was more likely that the auditors would report the matter to the appropriate regulatory authorities than refer to it in the audit report, while in Spain the reverse position held across all groups.

The extent of the differences in the auditors' responses in Spain and Britain raises questions as to the nature and consistency of audit reporting practice. For example, Spanish auditors on average thought that the probability of the public health matter being referred to in the audit report was 73 percent, compared to only 44 percent in Britain (44 percent of Spanish auditors in fact stated that they would *always* refer to the matter in the audit report compared to only 6 percent of British auditors). Both cases also give some cause for reflection on the role of the audit in processes of corporate accountability in that the perceived average probabilities of the auditor reporting on such issues were generally rather low. With the exception of the above-mentioned 73 percent probability on the part of Spanish auditors, the average percentage probabilities across the three groups ranged from 23 percent to 53 percent in Spain and 22 percent to 55 percent in Britain.

The case studies covering the extent of audit work undertaken with respect to the number of stock takes attended, the vouching of fixed assets, and the checking of

Table 7. Views of the likely actions that auditors would take in specific case studies (for details of each case see the Appendix)

| | A | FD | U | Kruskal-Wallis test |
|---|----------|------------|------------|---------------------|
| <i>Insider dealing</i> | | | | |
| Likelihood of the auditors referring to the matter in audit report ^a | SP GB | 39% 22% | 32% 33% | 37% 33% |
| Likelihood of the auditors reporting the matter to the appropriate regulatory body ^a | SP GB | 29% 55% | 23% 50% | 29% 51% |
| <i>Pressure to do no further work</i> | | | | |
| Likelihood of the auditors carrying out work without charging an additional fee ^a | SP GB | 67% 66% | 51% 49% | 47% 37% |
| Likelihood of the auditors resigning from the audit ^a | SP GB | 34% 39% | 36% 41% | 37% 41% |
| <i>Pressure to conceal information</i> | | | | |
| Likelihood of the auditors reporting to the appropriate public health body ^a | SP GB | 38% 22% | 42% 37% | 45% 38% |
| Likelihood of the auditors referring to the matter in the audit report ^a | SP GB | 73% 44% | 52% 38% | 53% 34% |
| <i>Attendance at stock-takes</i> | | | | |
| Number of warehouse stock-takes that the auditors will attend ^b | SP GB | 3.5 1.8 | 3.6 1.8 | 3.1 1.3 |
| <i>Vouching of fixed asset purchases</i> | | | | |
| Percentage of purchases to be checked to invoices ^c | SP GB | 62% 41% | 60% 47% | 56% 50% |
| <i>Checking secondary auditors' work</i> | | | | |
| Number of secondary audits to be investigated ^b | SP GB | 3.3 3.5 | 2.5 2.6 | 2.5 2.0 |

^aMeans based on the seven-point scale: 1 = Never, 4 = Sometimes, and 7 = Always.^bMeans based on a seven-point scale 0–6.^cMeans based on a seven-point scale: 0–100%.

A = auditor, FD = financial directors, U = users.

S* = across-group difference significant at 1% level of statistical significance.

S = across-group difference significant at 5% level of statistical significance.

– = across-group difference not significant at 5% level of statistical significance.

the work of secondary auditors also raises questions as to the consistency of international audit practice in that on two of the three cases, Spanish auditors on average expected 50 percent more audit work to be performed than the level anticipated by British auditors.²¹ Further, with financial directors and user groups generally expecting auditors (in Spain and, to a lesser degree, in Britain) to be doing less work than that estimated by auditors themselves, there is little to support the view that the perceptions of audit performance held by financial directors and users are based on overstated estimates of the extent of audit testing. That said, it remains an open issue as to whether their expectations of the audit function detailed above are based on realistic estimates of the capacity of audit techniques. This is an issue to which consideration is given in the concluding section of the paper.

In Britain, the case study on the likelihood of auditors doing unpaid audit work when faced with client fee pressure produced the largest across-group difference

among the case studies, with user groups far less confident that such work would be undertaken. In Spain, the case study still produced a significant across-group difference although its scale was reduced by a higher degree of confidence on the part of users that unpaid audit work would be undertaken – a finding consistent with the lower rating given by Spanish users to the auditors' success at profit making activities.

Key Themes and Issues in the Form and Construction of Auditing Perspectives in Britain and Spain

The principal purpose of the previous section was to provide an overview of the comparative responses in Britain and Spain to each major segment of the questionnaire. In doing so a number of differences in the two national surveys have been identified both with respect to expectations of the audit function and the perceived performance of auditors. Included in such findings are: the reduced extent of an audit expectations gap in Spain as compared to Britain; the relatively more favorable performance ratings received by Spanish auditors on specific public interest issues such as the detection and prevention of fraud and the general regulation of the quality of audit services; the distinctly narrower, financially oriented perspective of British auditors with regard to the nature and purpose of the audit function and the responsibilities of auditors; the generally mixed nature of preferences in both Spain and Britain regarding the structure of regulations on the activities of audit firms; and apparent inconsistencies in audit reporting and evidence collection practices in Spain and Britain.

The matter which forms the principal concern of this section of the paper is to address in more depth the meaning and significance of the findings reported in the previous section. To do this, the analysis moves beyond the rigid confines of the structure of the questionnaire, focusing on the patterns in responses to some key issues (covered in one or a number of the results tables). An attempt is also made to interpret particularly significant themes that emerge. Topics explored include the differential nature of cross-national ratings of auditing; the auditor and fraud; the auditor as corporate watchdog; and audit regulation. The paper then concludes by reflecting on the general construction of audit expectations and considering some of the paper's implications for future auditing research.

The Differential Nature of Cross-National Auditing Ratings

In concluding that the differences in expectations of auditing were far less extensive in Spain than in Britain, one issue that presents itself is the degree to which such differences are being driven by quite distinctive perspectives on the audit function or whether they are caused by more general national cultural variations.

The noted existence in the previous section of some clear trends in the individual tables of results (most notably the rather extreme nature of some of the views of British auditors relative to those of the other occupational groups) suggests that the lower expectations gap in Spain is not due to any general scaling effect (where for example, each group in Spain tends to rate audit performance higher than in Britain).

Table 8. The frequency of significant^a across-group differences in responses to the 62 questions in the British and Spanish surveys

| | Auditors and financial directors | Auditors and users | Financial directors and users |
|---|----------------------------------|--------------------|-------------------------------|
| <i>Number of significant^a across-group differences</i> | | | |
| British Survey | 50 | 56 | 39 |
| Spanish Survey | 28 | 36 | 11 |

^aSignificant at the 5% level of statistical significance when subjected to the Wilcoxon–Mann–Whitney test.

This view is reinforced by a general analysis of the number of significant differences in the questionnaire surveys as a whole across national occupational groups. These results are detailed in Table 8.

In both countries, the greatest number of significant differences arose in relation to the responses of auditors and users, followed by the comparative responses of auditors and financial directors and finally those of financial directors and users. The views of the three occupational groups in Spain, however, were of a much more uniform nature than in Britain, producing far fewer significant across-group differences. Spanish auditors were much closer to the views of Spanish users and financial directors, to the extent that significant response differences (at the 5 percent level of statistical significance using the Wilcoxon–Mann–Whitney test) were obtained on 20 and 22 fewer questions than the comparative views of British auditors with British financial directors and users. Spanish financial directors and users were even closer in their respective views. Their responses were significantly different on only 11 of the 62 questions – 28 less than the position in Britain.

The Auditor and Fraud

Having established that the questionnaire surveys have revealed the existence of generally different perspectives on auditing in Britain and Spain, the remainder of this section of the paper focuses on three key auditing topics as a means of further exploring the precise construction and significance of such different perspectives. This subsection examines the case of the auditor and fraud, while the following two consider the issues of audit reporting and audit regulation.

The nature of auditor responsibilities and performance with respect to the detection and prevention of fraud was discussed in various parts of the questionnaire and has already been referred to in earlier parts of the paper (see Tables 2, 3, 6 and 7). To facilitate the analysis in this section of the paper, these questions and the associated responses have been brought together in Table 9.

In terms of the perceived performance of auditors with respect to fraud, it is quite apparent that the ratings generally being received by Spanish auditors are higher than those received by British auditors. Thus, with respect to fraud detection, 81 percent of both Spanish financial directors and users agreed that Spanish auditors were successful at detecting errors and irregularities; the comparative position in Britain had 57 percent and 56 percent of British financial directors and users believing British auditors to be successful. With 83 percent of Spanish auditors and 75 percent

Table 9. The auditor and the detection and prevention of fraud

| | | A | FD | U | Kruskal-Wallis test |
|--|----|-----|-----|-----|---------------------|
| <i>The auditor should ensure that:</i> | | | | | |
| a company's audited financial statements contain no significant deliberate distortions | SP | 6.5 | 6.6 | 6.6 | — |
| | GB | 6.5 | 6.6 | 6.7 | S* |
| all significant fraud is detected | SP | 5.1 | 6.0 | 6.0 | S* |
| | GB | 4.1 | 4.7 | 6.0 | S* |
| <i>Auditors:</i> | | | | | |
| provide a significant protection against fraud | SP | 4.0 | 4.2 | 4.2 | — |
| | GB | 3.1 | 2.8 | 3.3 | S* |
| are successful at detecting errors and irregularities | SP | 5.5 | 5.4 | 5.3 | — |
| | GB | 5.1 | 4.4 | 4.3 | S* |
| are successful at preventing errors and irregularities | SP | 5.1 | 4.6 | 4.4 | S* |
| | GB | 4.2 | 3.6 | 3.6 | S* |

Above means based on the seven-point scale: 1 = Strongly disagree, 4 = Neutral, and 7 = Strongly agree.

A = auditor, FD = financial directors, U = users.

S* = across-group difference significant at 1% level of statistical significance.

S = across-group difference significant at 5% level of statistical significance.

— = across-group difference not significant at 5% level of statistical significance.

of British auditors regarding auditors as successful at such a detection function, a significant across-group difference only existed on this issue in Britain. In terms of the prevention of fraud, significant across-group differences were observed in both Spain and Britain, although the perceived performance of auditors in Spain was again rated more highly. Clear majorities of financial directors (57 percent) and users (56 percent) in Spain felt that auditors were successful while those holding such views in Britain were in clear minorities – 30 percent of financial directors and 28 percent of users. Spanish auditors rated their own performance (70 percent perceiving auditors to be successful at the prevention of fraud) significantly higher than the self-rating given by British auditors (only 44 percent perceiving audit performance as successful).

The degree of protection against fraud being provided by such detection and prevention functions, however, would appear to be something which all occupational groups are more sceptical about. In both countries, there were major differences between the ratings received by auditors for their perceived success in detecting fraud and those for providing significant protection against fraud. In Spain, 50 percent of users, 47 percent of financial directors and 43 percent of auditors agreed that the audit provided a significant protection against fraud, which compared to an across-group average of 80 percent of respondents who saw the auditor as successful in detecting fraud. In Britain, only 28 percent of users, 18 percent of financial directors, and 22 percent of auditors saw the audit as providing significant fraud protection, while clear majorities had seen auditors as being successful in the detection of fraud. The ratings provided by user groups and financial directors in both countries on the protection being provided by the audit against fraud were generally more closely aligned to their views on the success of auditors in preventing fraud. This suggests that the prevention, rather than the detection, of fraud is seen as the critical

element in any assessment of the significance of fraud protection, which in itself raises questions as to the construction of auditor responsibilities regarding fraud. Such a conclusion also points to a certain degree of inconsistency in the ratings provided by auditors in both Spain and Britain, with significantly lower percentages of respondents believing that auditors gave a significant protection against fraud as against being successful in preventing fraud.²²

Whether the detection of significant fraud is an appropriate audit objective also appears to be a rather problematic issue, producing a significant across-group difference in both countries. Eighty-four percent and 86 percent of the Spanish and British user groups respectively agreed that this was an audit role. Spanish auditors were significantly more accepting of such a role than their British counterparts, although both showed a lesser degree of support than the user groups (69 percent and 53 percent of Spanish and British auditors respectively agreed with such a role). The views of Spanish financial directors were not significantly different from those of users, while the views of British financial directors fell roughly between the other two groups.

What is particularly interesting is the differential nature of the responses principally of Spanish and British auditors and British financial directors to the statement that auditors should ensure that audited financial statements contain no deliberate errors. Presumably, the detection of all deliberate errors would incorporate all significant fraud; indeed, the Auditing Guideline on fraud issued in Britain by the Auditing Practices Committee²³ states clearly that fraudulent acts can, *prima facie*, be regarded as directly affecting the financial statements. However, the responses of both auditor groups and that of British financial directors are noticeably different, with much less support being expressed for the view that auditors should detect all significant fraud compared with the statement that auditors should ensure the financial statements do not contain deliberate errors. For instance, 69 percent of British and Spanish auditors *strongly* agreed that the financial statements should contain no deliberate distortions, but only 37 percent of Spanish auditors and just 14 percent of British auditors *strongly* agreed that auditors should detect all significant fraud. Such differences tend to suggest that the objectives of the audit with respect to fraud represent, particularly for British auditors, a highly sensitive area which can produce quite adverse reactions whenever the term is raised. If this is the case, it has important implications for those seeking change in the construction of audit objectives and practice because proposals on such issues are likely to be met by overly hostile reactions on the part of the auditing profession.

The Auditor as Corporate Watchdog

The views of Spanish auditors were significantly more accepting than British auditors of a number of duties beyond that of detecting significant fraud. As has been noted earlier (see Table 3), such duties included ensuring that: a satisfactory internal control system is operating; the future viability of the company is not in doubt; and the balance sheet provides a fair valuation of the company. Spanish auditors were also noticeably more willing to accept that an auditor could be held responsible for negligent acts by potential shareholders and existing and potential creditors.

Such attitudes generally seemed to reflect a differential public interest commitment on the part of Spanish auditors – a point reinforced by the way a clear majority of them agreed that an audit firm should not primarily act to make profits (a sentiment that was almost unanimously rejected by British auditors). That said, there were, nevertheless, areas (as has been seen with fraud detection) where even the views of Spanish auditors as to the role of the audit fell rather short of the expectations of Spanish user groups. For some functions, such as fraud detection, their appropriateness as an audit task was accepted by all groups, with any difference in views resting in varying degrees of support for the function. On others, however, the split in opinion was over its basic appropriateness, with the responses of both Spanish (and British) auditors appearing to sit rather uneasily with the above-noted public interest commitment. Two of the most notable issues in this respect concerned the perceived reporting role of the auditor relating to matters of corporate efficiency and the provision of information to external regulatory authorities.

With respect to reporting on corporate efficiency, there was a clear difference of opinion between auditors and users in both Spain and Britain. For instance, regarding whether the auditor should be ensuring that the company is being run efficiently (see Table 3), 57 percent and 72 percent of Spanish and British users supported such a duty compared with only 38 percent and 27 percent of Spanish and British auditors. Likewise, 57 percent and 67 percent of Spanish and British users believed that auditors should report to shareholders on the efficiency of corporate management (see Table 2), compared with just 30 percent and 42 percent of Spanish and British auditors. However, both Spanish and British auditors were much more willing to identify ways by which management efficiency could be improved (see Table 2), with the views of Spanish auditors (62 percent of whom were in favor of such a function) not differing significantly from the other occupational groups, while British auditors (84 percent of whom agreed with such a function) were significantly more supportive than British financial directors or users. In Britain, an increasingly common audit practice has been for audit firms to seek to supplement declining audit fees with revenues from other services provided to client management, additionally chargeable extras seeking to add value to the audit service.²⁴ Considering the above responses in the context of such practice, it could be argued that the views of British and, to a lesser extent, Spanish auditors reflect a philosophy that sees the issue of reporting on management efficiency as a chargeable addition to the basic audit and not something which forms a fundamental part of the basic audit responsibility to shareholders.

The only audit duty in Table 3 that Spanish auditors were less accepting of than British auditors was that of ensuring that the appropriate regulatory authority had been informed of any significant malpractice on the part of the audited company. In Britain, 65 percent of auditors agreed with such a duty, compared with only 30 percent of auditors in Spain. This issue also produced one of the most significant across-group differences in the Spanish survey with 48 percent of financial directors and 59 percent of users supporting such a duty – a degree of support which also fell significantly short of that expressed by British financial directors (69 percent) and users (87 percent). The general reluctance of Spanish auditors to report to regulatory authorities was further illustrated in the cases of suspected insider dealing and breaches of public health legislation (see Table 7). Here, Spanish auditors clearly preferred

communication through the medium of the annual audit report as against direct reporting to regulatory authorities.

In Britain, public dissatisfaction with relying on the audit report as the principal mode of reporting in such cases has recently been reflected in the publication of a draft auditing guideline concerning the role of the auditor in relation to illegal acts.²⁵ This allows the auditor to breach client confidentiality by reporting directly to the regulatory authorities on matters of public interest (a right also built into financial services legislation in Britain).²⁶ The lesser degree of public debate in Spain on such an issue could be an important factor in explaining the Spanish auditors' preference for communication through the audit report (as against reporting directly to regulators), although the impact of such a debate is unlikely to be clear and simple. British auditors, for instance, did not show a consistently more enthusiastic commitment to such forms of public interest reporting. While the average probability of British auditors reporting the suspected insider dealing case to regulatory authorities was 55 percent (compared with 29 percent in Spain), on the issue of a suspected breach of public health law their average reporting probability was 22 percent (significantly below the 38 percent probability for auditors in Spain).

Auditing Regulation

Another factor capable of influencing the views of Spanish auditors concerning reporting to regulators (but one which is also potentially critical to the future development of the audit function in both Spain and Britain) is the form of attitudes towards the regulation of auditing practice in general and depictions of related notions of professional autonomy. In the remainder of this part of the paper, some reflections are made on the views obtained from the surveys in Spain and Britain concerning the effectiveness of the present systems of audit regulation and the varying degrees of support expressed for a number of possible elements of a regulatory auditing regime.

A clear pattern in the comparative results is the way British auditors seemed to take much more extreme positions than their Spanish counterparts. Some indication of this is given by the respective range in recorded means for the eight propositions in Table 5. For Spanish auditors these ranged from 3.1 to 6.2 while for British auditors the range was from 1.6 to 6.7. Further, British auditors were noticeably strongly accepting (more so in some cases than either British financial directors or users) of audit regulations that currently exist in Britain (such as provisions covering the ownership of shares in audit clients or the levels of fees allowed to be earned from one audit client) and were clearly opposed to any possible regulations such as a ban on the provision of management advisory services to audit clients or for a maximum period of tenure to be placed on audit appointments. For example, 88 percent agreed that the audit fees received from one audit client should not exceed 15 percent of the audit firm's total fee income, whilst 91 percent disagreed an audit firm should not be allowed to provide management advisory services to its audit clients.

The responses of Spanish auditors contained no such clear-cut relationship between the respective support shown for existing and possible regulations. Spanish auditors (and Spanish financial directors and users) agreed more strongly than their British

counterparts that an audit firm should have its standards checked by a professional standards body. All groups in Spain were generally less against preventing auditors from providing management advisory services to their audit clients (with 30 percent of auditors, 31 percent of financial directors and 44 percent of users in Spain supporting such a prohibition).

Of some interest were the comparative responses to the proposals that an audit firm should have a maximum period of office and that the appointment of auditors and the specification of their fee levels should be determined by an independent regulatory body. The current system of auditing regulation in Spain requires auditors to be appointed for a minimum of three years and a maximum of nine. The audit profession is also independently regulated by an oversight body called the “Instituto de Contabilidad y Auditoría de Cuentas” (ICAC), whose responsibilities, while not extending to the setting of audit fees, do include the maintenance of the register of approved auditors and the right to check the standards of work of auditors.²⁷ The restrictions on an auditor’s term of office and the existence of an independent oversight body have both been an issue of some debate in Spain, with criticism of them from certain parts of the auditing profession being notable in an era where talk of the new Spanish auditing system has frequently been so positive.²⁸ Currently in Britain no such provisions exist concerning auditors’ tenure and there are no independent oversight bodies, although the Companies Act 1989 (Schedule 11, Part II, Section 46) does allow the Secretary of State to delegate any of his or her specified powers concerning audit regulation to an independent body and the recent Cadbury Report on Corporate Governance²⁹ has recommended that the profession develop rules covering the rotation of audit appointments (with the likely development being that the audit will move from the control of one audit partner to another in the same firm). A growing number of researchers and financial commentators in Britain have also recently called for the establishment of an independent oversight body to monitor the activities of auditors.³⁰

In terms of the survey responses, British auditors were strongly against both propositions (80 percent against a fixed period of office and 68 percent against an independent regulatory body). In Spain, a significantly lower, but (with 59 percent disagreeing with the proposition) still clear, majority of auditors were against the suggestion that audit firms should have a fixed period of office. However, Spanish auditors were evenly divided as to whether audit appointments and fees should be determined by an independent regulatory body. This comparatively lower level of disagreement with such existing reforms among Spanish auditors (compared to British auditors) lends further support to the view that the acceptance of a regulatory audit provision does not depend solely on an acknowledged inherent merit but can be significantly influenced through its having secured a place in a regulatory system in the first place. This point is of no small significance because traditionally one method of defence against change which the accounting profession in Britain (and elsewhere) have employed³¹ is to criticize the claimed merits of any proposed reform and (implicitly) privilege the assumed logic and well-being of the existing system (the newest components of which had perhaps themselves been criticized previously for their inconsistencies prior to their subsequent enforced introduction resulting from government pressure for change).

Concluding Comments

The comparative analysis presented here of auditing expectations and perceptions of auditor performance in Spain and Britain represents a conscious attempt to contribute to the developing focus of European audit research and to assist the move from rather official, descriptive documentations of respective national auditing systems to more specific assessments of the practical operation of such systems. The strikingly different histories of auditing in Spain and Britain, coupled with the apparently more enthusiastic belief in Spain as to the beneficial nature of auditing services, were seen as providing a productive focus for such a cross-national empirical study, particularly given that the auditing services market in both countries bears the significant presence of the same multinational accountancy firms.

An important problem facing any such international comparative survey is that of making sense of the wealth of data that can be generated. With 62 questions on the role and nature of auditing and the performance of auditors and three different sets of occupational groups surveyed, the examination of auditing in Spain and Britain was not something to break such a trend. We have sought to overcome such problems of analysis by first presenting an overview of the results obtained, dealing separately with each major section of the questionnaire, and then focusing on a number of key themes and issues to emerge from the analysis.

As could be expected with such an initial study, aside from producing a number of indications as to the differential nature of auditing expectations and perceptions of auditor performance in Spain and Britain, the survey results have also provided a clear list of questions for further consideration. Not least among the outstanding questions is the issue of what factors are particularly influential in giving rise to the existence of different auditing perspectives in Spain and Britain. Some attempt has been made in this paper to place the responses in their national contexts, and indeed an important finding in the comparative analysis has been its confirmation of the reduced nature of any gap in audit expectations in Spain compared to the position in Britain. Of some note in exploring such a position has been the generally more favorable performance ratings received by Spanish auditors and the considerably more restrictive views of British auditors regarding appropriate audit roles and responsibilities.

These findings emphasize the need to examine in more depth the basis on which auditing expectations are being formed and, more importantly, the nature of audit practice "in action" and the extent to which such practice is capable of living up to the (high) expectations held for it. As has been noted,³² there remain a vast number of issues to be addressed with respect to the practical operation of auditing techniques in an era of changing national audit systems in Europe. The perceived success of Spanish auditors on issues (such as the detection and prevention of fraud) that have been central to the audit expectations gap debate in Britain represents just one key topic for future investigation, to examine exactly what (if anything) Spanish auditors are doing differently from British auditors with regard to such tasks. At one level, it could be that Spanish auditors have distinctive fraud detection skills, or that with their apparently lower concern with matters of financial profit they choose to devote more attention to such tasks. Alternatively, it could be that the differences have very little to do with technical matters of audit work. For instance, it could be that national

definitions of what is regarded as fraud differ, with differential judgments on the auditor's success being driven by varying attitudes towards crime. Another reason could be that there is less fraud in Spain although evidence from the questionnaire survey tends to discount this argument.³³

Perhaps more significantly, it could be that the Spanish auditors' adjudged success in fraud detection and prevention (and other areas of their work) are overestimated. It could also be argued that a generally unsupportive financial press may have helped to ensure that the reverse position applies in Britain, with standards of auditor performance generally being regarded as worse than they are. Extending this argument, it could be suggested that in a short time when the novelty of the Spanish audit reforms has worn off, and when the economic recession and the decline in foreign investment in Spain (together with the financial constraints invoked by the Spanish government's desire to meet the EC's criteria for monetary union) produce a series of major corporate failures, a survey of Spanish audit expectations will bear a much greater similarity to the current British survey.

A traditional stance taken by the auditing profession³⁴ has been to argue that the audit expectations gap is the inevitable accompaniment to a service which both retains a significant public good element (with the expectations of auditing beneficiaries regarding the desired extent of audit work often not having to be formulated with any consideration of a cost/budget constraint) and where an over-emphasis is given, to incidents of audit failure (with the more usual high-quality work being essentially invisible or taken for granted in a continuing business environment). Rooted in such a view is an assumption that ignorance on the part of audit recipients (whether to the cost or infeasibility of desired audit services, or the intended role of the audit, or the nature of business activity and the distinction between corporate failure and audit failure) drives audit expectations gaps – that they are education gaps rather than performance gaps.

A developing strand in auditing research is increasingly calling into question the assumption of an education gap and has shown the profession to have had played an important role in giving a continued existence to an expectations gap in countries such as Britain and the United States.³⁵ The differential nature and distinctive patterns in the comparative sets of auditing perspectives in Spain and Britain make it that bit harder to substantiate the inevitability of a gap or to rely uniformly on notions of ignorance, especially given the existence of different performance ratings for Spanish and British auditors; the greater similarity in the responses of financial directors and users in both Spain and Britain (relative to any national cross-group comparison involving the views of auditors); and that in both countries user groups anticipated the extent of audit work to be less extensive than that envisaged by auditors themselves. Further, the clear self-rating bias on the part of auditors and the particularly outlying views of British auditors raise concern as to the extent to which the views of the auditing profession should be privileged in discussions on the need for change in auditing systems and their regulation. With many financial directors being qualified accountants and ex-auditors, it is somewhat difficult to argue, for example, that 50 significant differences in the respective responses of British financial directors and auditors to 62 survey questions can be attributed to the former holding a "grudge" against the latter.

A key principle underlying recent work on auditing and audit expectations has been the desire to highlight the socially constructed and interested nature of auditing practice. In many ways, perhaps the most telling response to those who classify as peripheral or misplaced the concerns about audit performance that are starting to be raised through issues such as the expectations gap debate is to emphasize the foundations of such a research agenda. If there is nothing wrong with audit practice, then there can be little objection to opening such practice to greater public scrutiny on both national and international dimensions; to move from what has been classified³⁶ as stagnant "if only theories of auditing" to detailed assessments of the operational nature and capacities of audit practice and the assumptions on which such practice is based. This comparative survey has clearly revealed that there is nothing fixed and absolute about perspectives on auditing, even among those professionals delivering auditing services. Auditing roles, duties, responsibilities, evidence collection procedures, standards of performance, and regulatory systems are temporal, contextually dependent phenomena. As such, the desire to close any audit expectations gap should not be seen as inevitably requiring the closing of avenues of reform or investigation simply because a national accounting profession happens to regard them as inappropriate. For as this survey has repeatedly shown, what British auditors so often reject, is accepted, expected and perceived to exist in Spain.

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- Gonzalo and Gallizo, op. cit.
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11. These activity constructs were the consensus constructs derived from a repertory grid analysis constructed from detailed, structured interview with 38 auditors, 26 investment analysts and 7 financial directors.
12. Humphrey, Moizer and Turley, op. cit.
13. See Ortega Martínez, *Manual de Investigación Comercial* (Madrid: Pirámide, 1990) who notes that the response rates for postal surveys in Spain generally range from 10% to 20% (p. 129).
14. Siegel, S. and N.J. Castellan Jr., *Nonparametric Statistics for the Behavioural Sciences* (Singapore: McGraw Hill, 1988), 206–216.
15. Siegel and Castellan, op. cit. 128–137.
16. Although it may that the Spanish responses have been influenced by the belief that current Spanish accounting standards are not weak and imprecise (a view often portrayed in the financial press in commentaries on recent legislation covering corporate accounting and reporting practice – see Cubillo Valverde, C., "La reforma contable en España." *Revista Española de Financiación y Contabilidad* (April–June 1990), 301–315; Lizcano Alvarez, J. "El Nuevo marco legal de la Contabilidad en España." *Boletín AECA* (No. 21 4–6; Tua Pereda, J., "El Plan General de Contabilidad y el Derecho Contable." *Revista Española de Financiación y Contabilidad* (October–December 1990) 823–837.
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18. See Financial Reporting Council, *The State of Financial Reporting: A Review* (London: Financial Reporting Council, 1991); Financial Reporting Council, *The State of Financial Reporting: Second Annual Review* (London: Financial Reporting Council, 1992).
19. The position, though, is not that clear cut because Spanish users were significantly less against the notion of limited liability than British users. Further, despite the general view in Spain that audit firms should not principally be driven by profit-making objectives, the support (even among financial directors and users) was rather mixed for a variety of regulations concerning the activities of audit firms. These regulations included those preventing such firms from providing management advisory services to audit clients and from earning any more than 15% from any one client (support for this being significantly greater in Britain), and those stipulating a maximum period of office for auditors, or requiring audit appointments and fee levels to be set by an independent regulatory body.
20. Humphrey, Moizer and Turley, op. cit.
21. For instance, in relation to the verification of fixed asset purchases, 53% of Spanish auditors expected auditors to vouch between 67% and 100% of the value of the purchases, while 63% of the British auditors anticipated that auditors would vouch between 0% and 34% of the purchase value.
22. One way of reconciling such an apparent inconsistency could be to suggest that the auditor's perceived lower degree of success in preventing (as compared to detecting) fraud was effectively being regarded by the auditor groups as seriously undermining the degree of protection being protected against fraud by the audit.
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31. Humphrey, Moizer and Turley op. cit. (ref. 7).

32. García Benau and Humphrey, op. cit.

33. For instance, in response to a statement that corporate fraud is widespread in financial institutions, over 40% of respondents in each Spanish occupational group expressed their agreement with the statement. In Britain, only 22% of auditors, 24% of financial directors, and 32% of users expressed the same view.

34. For a discussion, see Humphrey, Moizer, and Turley op. cit. (ref. 24).

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36. García Benau and Humphrey, op. cit.

Appendix: Case Study Descriptions

1. Insider Dealing Case

During the course of the audit of an international construction group, the auditors discovered a case of insider dealing. In the week prior to the public announcement of a major overseas contract, the managing director had purchased a significant number of the company's shares on the Stock Exchange. After the announcement of the contract, the price of the shares rose by 40 percent and in the subsequent two weeks the director reduced his/her shareholding to its previous level.

How likely is it that the auditors will:

- (a) refer to the matter in the auditors' report;
- (b) report the transaction to the appropriate regulatory authority?

2. Pressure to do no Further Work Case

During the audit of a company listed on the UK Stock Exchange, the existence of fraud is strongly suspected in the area of cash receipts from sales. The amount involved is estimated to be £100 000, equivalent to 20 percent of profit before taxation. The audit engagement has arisen as a result of a tender and the fee level is very "competitive." The desirability of further work in testing cash receipts from sales has been mentioned to the chief executive, who told the auditors to "forget it" because the company would not pay any more for the audit than the agreed tender fee.

How likely is it that auditors will:

- (a) carry out the work without charging an additional fee;
- (b) resign from the audit?

3. Pressure to Conceal Information Case

The auditors of a food-manufacturing company have discovered that the company has sold a contaminated baby product. This information is known only by trusted employees and by the chief executive. The potential liability of the company is a significant amount, but the chief executive does not want the information to be made public and has threatened to change auditors if they do so.

How likely is it that the auditor will:

- (a) report the matter to the appropriate health body;
- (b) refer to the matter in the audit report?

4. Evidence Collection by Attending Stock-Takes

A major supermarket company has six large warehouses each holding stock worth a similar amount. The total value of the stock represents two months' purchases. The company auditor's have evaluated the computer system for recording receipts and issues of stock and found it to be satisfactory. Each year-end, the company carries out a physical stock-take in each of the six locations.

What is the most likely number of warehouse stock-takes that you think the auditors will attend?

5. Vouching of Fixed Asset Purchases

At the year-end a company has plant and equipment totalling £5 million in cost. The company's total net assets are £10 million and profit after tax for the year is £2 million. According to the company's records, during the year 40 items of plant and equipment have been purchased. The purchases were all similar and totalled £1 million. What is the most likely percentage of the total number of purchases of plant and equipment that you think the auditors will check to original purchase invoices?

6. Checking of Secondary Auditor's Work

A large public limited company, XYZ plc, is audited by an international firm of accountants. The company owns six subsidiary companies, all of a similar size. Each subsidiary is audited by a different UK office of another international accounting firm. The six subsidiaries represent approximately 50 percent of the group's net assets and the group's profit for the year. The accounts of the subsidiary companies have all received unqualified (clean) audit reports from their own auditors. The auditors of XYZ plc are currently determining their overall audit opinion on the group financial statements and are considering whether or not to investigate the work of the subsidiary companies' auditors.

What is the most likely number of subsidiary company audits that you would expect the auditors of XYZ plc to investigate?

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Accounting for Software Costs in the United States and Japan: Lessons from Differing Standards and Practices

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Abstract: Software cost may soon exceed the cost of the fixed assets for automated production facilities in all countries. Our examination of the software construction and standard-setting environments in the United States and Japan demonstrates how different conceptual accounting models of a new process impact the accounting standards. We indicate how the cost accounting focus in Japan led to a different model of the development process (essentially a construction metaphor) than did the financial accounting focus and fairly rigid US accounting standards of the mid-1980s (which resulted in use of a manufacturing production metaphor).

How should software costs appear on the financial statements of a company? As these costs grow larger, their treatment becomes increasingly more important. For example, in Nagoya, Japan, the Mitsubishi Electric Company has a fully automated plant which works 24 hours a day, and almost all productive activities are performed by robots. During the third shift no direct labor employees are at work at the plant – production without direct human effort. The employees at the plant are solely concerned with maintenance, R&D, software development, and security. According to the company's management, approximately 75 percent of the hundreds of millions of dollars it cost to build the plant¹ was spent on software to manage the automated systems of the plant.

These costs could be accounted for very differently depending on whether the plant is owned by a US company or a Japanese company, since US and Japanese accounting methods do not embody the same assumptions, and thus result in different treatments. In both countries the main issue is whether software costs are current expenses, belonging on the income statement, or whether they should be treated as assets: capitalized and placed on the balance sheet. The debate on this issue is made more acute by the constant evolution in the software construction process itself,

even as accounting treatments become more standardized. Two key facets of the software construction process have changed greatly in the last decade: the risk of technical failure of a software project, and the delinearization of the development process. Both of these changes have affected financial accounting in the United States and Japan.

Risk of Technical Failure and Delinearization of the Construction Process

Many projects were of high risk in the early days of computer programming for it was often not certain whether the software could be developed to meet the desired specifications. Today, however, most software projects resemble construction or manufacturing projects. That is, while it is *not* known whether they can be completed profitably, it *is* known that they can be completed and by what methods. In fact, as early as 1983 an Internal Revenue Service (IRS) spokesperson indicated that the IRS considered only approximately 6 percent of all software projects to be high risk.² More recently, Cusumano³ described the creation of Japanese software factories that have made software development much more systematic. Japanese factories have achieved almost a 50 percent reuse rate for code modules, indicating a very high degree of process certainty.

Impact of the Evolution of Software Development on Accounting Standards

The changes in construction risk and method have not led to changes in US Generally Accepted Accounting Principles (GAAP) accounting treatment. In fact, it seems that in the United States the assumptions as to risk and construction methods identified in SFAS 86 were not felt to be assumptions but, rather, were thought to be states of nature. Therefore, if current US GAAP were applied to the Mitsubishi plant described in the introduction, it is easily possible that just slightly more than 50 percent of the total cost of the factory would have been capitalized if the company chose to apply SFAS 86 methods.⁴ If the software were all developed internally there is no US GAAP requirement to capitalize any portion of the development cost and only the actual building cost would be capitalized.

Motivated by the certainty that such disparity will become more important to our economy as firms adopt advanced production and operating regimes, we seek to develop an understanding of software costs and how they can be reflected in the accounts. We examined the current and prior financial accounting standards in both countries, software construction methods, the results of two surveys of accounting practice (one US and one Japanese), and conducted a new US survey of accounting practices. We additionally interviewed US and Japanese software engineers and accountants.

In the next section we consider both the environment surrounding software construction and the accounting standard-setting process in the United States and Japan. In the subsequent sections we examine the results of surveys of accounting practice to reveal how the standards are applied. In the final section our conclusions are presented.

Background

An understanding of three specific elements of the software environment is needed to gain complete comprehension of US and Japanese software accounting: the differing *cost structure* for software construction, the construction *methods* used, and the accounting *standards* applied. Each of these elements differs between the two countries. The differing cost structure of the two software construction markets led to diverse market configurations and a focus on cost accounting in Japan which impacts financial accounting. The same construction methods are not used in both countries, which leads to alternate views of financial costing alternatives because of the different "facts" in the process. The accounting standards are also set in different ways and for different reasons in the two countries.

The Cost Structure for Software Construction

A large number of US and Japanese companies construct software internally. In Japan, more than one third of all companies also rely heavily on software constructed externally under contract (outsourced software). The software constructed in this manner is called *Itaku* by the company placing the order (buyer), and *Jutaku* by the software builder (maker). The risk of failure is usually borne by the ordering company in a cost-plus contract. In the United States, although not yet common, there is currently a move to outsourcing a large variety of business functions, including software development.

In Japan, outsourced software is prevalent because the structure of the labor market creates a pool of relatively low-salaried yet very competent software engineers. The reason for the lower salaries is that for an employee in a Japanese company to be promoted, he or she must be willing to move across functional areas fairly frequently (every 3–5 years). Therefore, staying in a specialized department dramatically decreases one's potential for promotion. As a result, people who desire a career in software engineering tend to work for software houses – where specialization is not so heavily penalized but the wages are lower. In contrast, in the United States, consultants (especially computer/software consultants) often have higher salaries and prestige than employees of the company using the consultants. In this respect the structure of the labor market in the two countries is extremely different.

Once an *Itaku/Jutaku* contract is made, cost accounting is essential to evaluate the software product costs incurred under the contract. Measurability, a critical criterion for identifying economic resources, has become increasingly important as many software developers have introduced cost accounting systems for software. In 1975, only 31 percent of Japanese software houses had installed cost accounting systems, but the rate increased to 35 percent in 1979, and 57 percent in 1986.⁵ By 1989 67 percent of Japanese software houses had software cost accounting systems and 17 percent did cost accounting on an *ad hoc* basis, while 16 percent did no cost accounting. The 1991 US survey indicates that 33 percent of the US software houses have cost accounting systems, the oldest installed in 1975, but most installed in the mid- to late 1980s. In an outsourcing dependent/cost-plus environment, the identification of costs is integral to determining what amounts are reimbursable under the contract,

and thus is probably one of the factors contributing to the advanced development of the cost accounting methods observed in Japan. We will see later how the Japanese emphasis on cost accounting has impacted their financial accounting methods.

Construction Methods and their Impact on Accounting Treatment

The construction methods used for software are also different between the two countries. Our interviews with US and Japanese software engineers and accountants have indicated to us that US financial/cost accounting is very heavily impacted by the linear project life cycle as viewed through SFAS 86. Interestingly, on the other hand, the Japanese understanding of the software development process appears to have come from observation of the process itself (as part of the cost accounting evaluation), and no attempt is made to fit the data into the linear project life cycle construct.

In both the United States and Japan the construction of software of all types generally involves three major phases: market and systems research, production, and maintenance. The conceptual content of the phases is also generally accepted; in the research phase, the company gathers information for new software construction and establishes technological feasibility; in the production phase the software is actually created; in the maintenance phase the software is improved and any errors are remedied. It is in the identification of specific activities within each of the three phases that opinions differ.

The type of approach which has most strongly affected US accounting standards is a structured, linear process, one variant of which is called the “Structured Project Life Cycle” (Fig. 1a). This approach, if rigidly followed, would be considered operationally obsolete today in most software development shops because its phases are both serial and non-recursive. In this six-step method, the first step is market research. The second is systems research/analysis to examine the “problem.” The third step is called systems design – preparing a plan to guide the construction of the software. The fourth step is detail program design; the fifth is coding, and the sixth is testing. Early in the history of software development (until the early 1980s), technological feasibility was assumed to be established at the end of the fourth step (detail program design), including some coding and testing. Today, however, software engineers believe feasibility to be determined much earlier in the process, perhaps even in the late systems analysis phase (step 2 above). After testing is complete, documentation and training materials are prepared and the program is duplicated for distribution. Once the software has been installed and/or has become established in the marketplace, the last phase begins: the maintenance process for continually improving or modifying the existing software.

Typical development approaches in Japan are distinct in that many of the steps are done in an iterative manner, with constant testing and modification. When presented in the manner shown in Fig. 1a this process may seem similar to the US method described above; however, the implementation of the steps is different. The first step is market research. The second is systems research/analysis to examine the problem. The third step is to prepare a plan to guide the construction of the software. The fourth step is systems design. Fifth is production, which merges the three steps

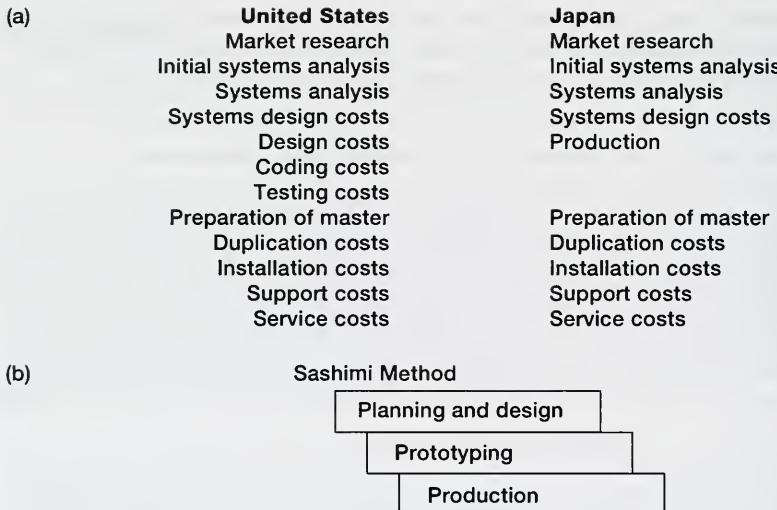


Fig. 1. Comparative system life cycles. (a) Traditional description. (b) Alternative description.

of detailed design, coding and testing into an irreducible process. This fifth step is performed by one group of people and is thus a different conceptual understanding of the central phase of software development. Today, technological feasibility is assumed to be established late in systems analysis (otherwise, the software engineers say, why continue with the project?). The method is becoming known in Japan as the Sashimi Method⁶ as shown in Fig. 1b. The steps we discussed above as the US model occur within the bounds of the three groups of activities shown in Fig. 1b, and they are performed by groups of multifunction workers (tanoukou) in a very tightly knit process. Thus, even though some of the steps can be presented in a way that seems similar to the more linear method, the methods are in fact very unlike in application, and should probably be considered different methods. The essential and distinguishing feature of the Japanese method is the merging of the steps by use of multifunctional workers.

While there are methods used in the United States which are similar to the Japanese approach we mention here,⁷ they have not had an influence on accounting practice, most likely because they were not prevalent in the academic and professional literature until after SFAS 86 was issued. Even today, the construction methods used in the United States and Japan differ. For example, preliminary unpublished results of a study by Sakurai indicate that the technique of "Rapid Prototyping" which is becoming popular in the United States is not often used in Japan.

An accountant's understanding of specific construction methods will influence assertions as to which costs can be treated separately. If one's experience is with a tightly integrated method, where employees may be working on different steps recursively or simultaneously, it is unlikely that the resulting accounting treatment would be the same as if one were familiar with a more linear, sequential process. As a result of their popularity in the mid-1980s, the linear processes are embedded in

SFAS 86. The influence of these highly structured software development models on Japanese accounting practices has been limited.

In addition to the software construction environment, the regulatory environments existing in the United States and Japan each has unique features which shape accounting treatments for software. The standard-setting regime in each country is discussed in the following section.

Standard Setting: The FASB and Tax Laws

Financial accounting standards are set differently in the United States and Japan. In the United States, the Securities Exchange Commission (SEC) has responsibility for financial accounting by publicly held companies, but delegates authority in most cases to the FASB, which sets the financial accounting standards. Tax regulations are set by government authorities (primarily the IRS). With few exceptions, financial and tax regulations do not directly affect each other. In Japan, however, the bottom-line net income of annual financial accounting and tax accounting must be the same (although intermediary steps need not be so). Thus, although there is latitude to choose different treatments, there is a strong practical incentive to use the same treatment in both reports since it greatly simplifies the reporting system. Not surprisingly, this also creates an incentive for the use of income reducing methods in financial reporting. In this section the main influences on financial accounting (US) versus financial/tax accounting (Japan) are discussed.

The United States

As early as the formation of the FASB, its rules began to specify accounting for software costs, first in SFAS no. 2, "Accounting for Research and Development Costs," which discussed R&D aspects of unbundled software constructed internally for sale, and later in both FASB Interpretation no. 6, "Applicability of FASB Statement no. 2 to Computer Software," and the FASB technical bulletin on software costs.

SFAS no. 86 required capitalization and amortization of coding and testing costs for Software Constructed Internally to be Marketed to others (SCI-M), as well as for purchased software, and capitalization to inventory of the cost of duplicating and packaging the software. Prior to this, SFAS no. 2 had mandated expensing costs as R&D although there was a trend towards more capitalization after the SEC issued a moratorium on this requirement in 1983.

SFAS no. 86 took the position that accounting for the costs of Software Constructed Internally for Internal use (SCI-I) was not a significant problem, and therefore, decided not to broaden the scope of the project nor to add a project on internal-use software to its present agenda. The Board believed that the majority of companies expense all costs of developing software for internal use and was not persuaded that the practice was improper. There is currently, therefore, no required accounting treatment for SCI-I. Returning to the completely automated factory mentioned in the opening paragraph of this paper, if the software was constructed internally as much as 75 percent of the cost of the new facility could be either expensed or capitalized, as management desired.

The official accounting treatment for internal-use software remains unclearly defined and there are divisions of opinion as to the method to use. For instance, in contrast to the FASB position, the Management Accounting Practices (MAP) Committee of the National Association of Accountants prepared an issue paper, "Accounting for Software Used Internally",⁸ which states that costs for SCI-I should definitely be capitalized in some cases. In these differing opinions a shift can be noted during the past decade from R&D expense to capitalization as the preferred treatments.

Japan

As stated earlier, in Japan the bottom-line net income of financial accounting reports and tax returns must be the same. Thus, although there are *no* financial accounting standards for software *per se*, the accounting methods *are*, in effect, established by the Japan Tax Research Institute.⁹ Although the Standards are not compulsory, virtually all companies attempt to comply with the Institute's recommendations. Contrary to the US model, the Standards specify circumstances where internally constructed software should either be expensed or capitalized (depending upon the types and categories of software). Purchased software should be capitalized except when used on an R&D project (which is similar to US practice). The tax code itself¹⁰ allows companies to expense all internally constructed software (SCI-I or SCI-M) if desired but requires capitalization of costs for software constructed externally under contractual arrangement (outsourced software) and purchased software. The Tax Code is thus more lenient than the voluntary standards set by the Japan Tax Research Institute.¹¹

In summary, in both the United States and Japan the financial treatment of software development costs differs based on source (internal and external) and purpose (use or sale). US standards currently require the capitalization of purchased software and portions of SCI-M but do not directly address SCI-I or outsourced software. When any software is capitalized (including SCI-I or outsourced software), the costs capitalized as an intangible asset should be costs for coding and testing only. Costs for copying and packaging should be capitalized as inventory. In Japan, costs for purchased software and outsourced software are required to be capitalized by the Tax Code (there are two exceptions for outsourced software, which will be discussed later in the paper). Costs for SCI-(I or M) may be expensed or capitalized as desired. If the costs are capitalized, the scope of capitalization is not specified precisely. Thus, in Japan the rules can be considered less stringent except for outsourced software. The extent of capitalization is shown in Fig. 2.

Surveys of Accounting Practices for Software

In the results section we examine empirical data from three surveys: the SoftIC surveys,¹² a new 1991 survey of 42 US software houses, and also McGee's 1984¹³ survey. McGee surveyed the accounting practices of 88 software vendor companies and 216 software users. In early 1991 a new survey of 110 US software houses (38 percent response) was conducted for a current US comparison. In Japan, a SoftIC committee on "Accounting for Software" was formed in 1987. The survey presented

| Capitalization or expense in the US and Japan | | | |
|---|----------------------------|------------------------------------|--------------------------|
| Category of costs | United States GAAP 1990 | Japan Dominant practice 1990 | Category of costs |
| Market research | expense | expense | Market research |
| Initial systems analysis | | | Initial systems analysis |
| Systems analysis | | capitalize: intangible | Systems analysis |
| Systems design costs | | | Systems design costs |
| Design costs | | | Production |
| Coding costs | capitalize: intangible | capitalize: inventory | Preparation of master |
| Testing costs | | | Duplication costs |
| Preparation of master | | expense | Installation costs |
| Duplication costs | | | Support costs |
| Installation costs | expense | expense | Service costs |
| Support costs | | | |
| Service costs | | | |

Fig. 2. Different capitalization practices.

here is one of its research activities. The questionnaire was sent in October 1987 to major software houses (all members of JISIA, Japan Information Service Industry Association), computer makers, and users (all public companies listed on the first sections of the Tokyo, Osaka, and Nagoya stock exchanges, which would be similar to Fortune 500). The response was 675 of 1641 companies (41.1 percent), with computer makers and users 37.3 percent (459) and software houses 45.8 percent (216).

In the following sections we discuss the findings of these three surveys which relate to the key issues of accounting techniques used in the United States and Japan for two types of software where there are differences between the two countries: outsourced software and SCI-(I and M).

Results and Discussion

Outsourced Software

Contract software (outsourced software) is not as common in the United States as it is in Japan. As a result, its accounting treatment in the United States is less well specified. Legally, Itaku (outsourced software) is similar to purchased software because the typical cost-plus provisions of the contract make it a type of purchase. Viewed from an economic perspective, however, Itaku software is not similar to purchased software but more similar to SCI, which raises the familiar GAAP concern with substance over form. The technological feasibility of any given project for the purchasing company is the same as for the SCI-(I or M), because all the costs

incurred to construct the software, including any portion which is true R&D expense, must be paid under typical contract arrangements. The purchasing company retains the same risk of constructing the software as if it were constructed internally.

In the United States, the FASB does not address the accounting for and reporting of costs incurred for outsourced software. For tax reporting, however, contract expenditures for custom-designed software can either be capitalized or expensed according to the company's preference as long as the treatment is consistent.¹⁴ In Japan, although the Tax Accounting Standards for Software recommend expense treatment for Itaku software (treating it as internally constructed), corporate tax laws treat it as a purchase and require capitalization for the costs of Itaku software, with two exceptions described below.

Results of the Japanese survey indicate that 72 percent of the respondents capitalize costs incurred for outsourced software for external financial reporting. In contrast, of the 20 US companies in the 1991 survey using this type of sourcing, only 25 percent capitalize some or all of the costs. According to Japanese Tax Law, companies can expense Itaku costs in the following two cases: (1) if the company uses temporary workers (consultants); or (2) if the company asks a Jutaku (maker) company to execute only the coding and all other construction activities are done by the purchaser.

Overall, the Japanese companies capitalize the costs of outsourced software at a much higher rate than do US firms. Although the high rate of capitalization in Japanese financial reporting can be attributed to the influence of the tax code, the very low number of US firms choosing to capitalize outsourced software cannot be as easily explained. Two likely contributing factors are that (1) the cost of this type of software is not material for most of the US respondents, and (2) the current treatment for SCI-I is to expense all costs. Accounting for outsourced software will probably become more important in the United States as outsourcing of software becomes more prevalent.

Capitalization or Expense of the Costs of SCI-I

In recent years there has been a dramatic increase in both countries in expenditures for software constructed internally for internal use. As a result, accounting for such costs has become increasingly important; in fact, it will probably become one of the most important issues in accounting for software.

The main arguments for the capitalization of SCI-I assert that software of this type should be capitalized because fixed assets constructed internally must be capitalized under both present financial accounting standards and the tax code and there is no substantial difference between such fixed assets and software. It is also true that technological feasibility is almost the same for both internal-use software and software for sale, and distinguishing between software for internal use and for sale is very difficult.¹⁵ For example, after a company has constructed software for internal use, it may discover a wider market application. There are also those who argue that SCI-I for production control should be capitalized because it has the definite purpose of cost reduction rather than improving selling and administrative effectiveness.¹⁶

The arguments for expensing the costs in the first year are based on an assertion that software for internal use resembles "know-how," which would not be capitalized.¹⁷ In addition, the possibility of generating revenue is less direct than for SCI-M. Although it might be argued that the certainty of future benefits is greater for SCI-I because only technical success is necessary, it is also argued that SCI-I has a higher risk of failure to realize future benefits than assets held for sale because the benefit may not be directly related to net cash inflow in an observable way. Such arguments for expensing SCI-I costs are not firmly based in existing theory, however. For example, using this same logic to analyze betterments to fixed assets would lead to expensing rather than capitalizing. Even though there are no revenues to match directly against (SCI-I) software construction costs, logically there must be anticipated benefits or else management would have no reason to complete such projects. A lack of familiarity with intangibles as a class and with software in particular is probably one of the primary reasons that the facts are not perceived similarly.

McGee in 1984 indicated that the vast majority of both private (97 percent) and public (92 percent) software vendor companies expensed costs for SCI-I in the United States (approximately 5 percent capitalized). The number of user firms that expense internally constructed systems software and application software is also very high: 89 percent and 88 percent, respectively. The 1991 survey with 78 percent expensing and 22 percent capitalizing shows that even though there is no requirement to capitalize these costs, the number of US firms capitalizing all or part of the cost quadrupled from approximately 5 percent to 22 percent. US firms capitalize these costs slightly more frequently than the Japanese software houses described next.

The standards prepared by the Japan Tax Research Institute state that SCI-I should be expensed. The Japanese Tax Code also allows companies to expense SCI-I costs which would reduce the tax obligation. The 1989 SoftIC survey reveals that a majority of the computer makers (100 percent), user companies (94 percent), and software houses (83 percent) expensed SCI-I as selling and general administrative costs in Japan. Although there is some basis for asserting that SCI-I costs for manufacturing production control should be capitalized because SCI-I has the intended purpose of achieving cost reduction or revenue generation, even in this category of software the vast majority of Japanese computer makers (100 percent), user companies (94 percent), and software houses (83 percent) expensed these costs. The same is true for internally developed software for R&D purposes; computer makers (100 percent), user companies (92 percent), and software houses (79 percent) had high rates of expensing. Table 1 reports the comparative results of US and Japanese companies. The 1984 US companies had the lowest rate of capitalization while the Japanese software houses and the 1991 US software houses had higher rates of capitalization.

For those companies that capitalize software development costs, there are large differences between US and Japanese companies. As can be seen in Table 2, for US software developers, the costs most frequently capitalized as intangible assets are design, coding, and testing. In 1984 (prior to SFAS 86), approximately 48 percent of the US companies that capitalized SCI-I also capitalized costs for feasibility studies. The 1991 US survey indicates that approximately 33 percent of the companies capitalized feasibility costs, 67 percent capitalized systems analysis and systems design, approximately 83 percent of companies capitalized detailed design, and 100

Table 1. Capitalization-expense of software costs for SCI-U

| Accounting treatment | US companies 1984 | | | | US companies 1991 | | | | Japanese companies | | | |
|---------------------------|-------------------|-----|--------------------|-----|---------------------------|------------------|----------------|-----|--------------------|-----|---|---|
| | Vendors | | Users ^b | | Software developers/users | | Software house | | Users ^c | | | |
| | n | % | n | % | n | % | n | % | n | % | n | % |
| Expenses | 83 | 97 | 191 | 88 | 23 | 85 | 150 | 83 | 409 | 93 | | |
| Inventory | 1 | 1 | — | — | 1 | 4 | — | — | — | — | | |
| Other assets ^a | 2 | 2 | 22 | 10 | 6 | 22 | 25 | 14 | 19 | 4 | | |
| Others | 0 | 0 | 3 | 2 | | | 5 | 3 | 6 | 2 | | |
| Total | 86 | 100 | 216 | 100 | 27 | 100 ^d | 180 | 100 | 434 | 100 | | |

^a Other assets are mainly non-current assets.^b Only application software.^c Both users and makers included.^d Multiple responses were possible, indicating that portions of total cost were capitalized and portions expensed.

percent capitalized coding and testing. While the rate of capitalization of coding and testing costs has risen to nearly 100 percent, other areas have decreased reflecting the SFAS 86 requirements. A small group of US companies in the 1991 sample (10 percent of the total sample and 33 percent of those capitalizing) use a much broader view of what is capitalizable, equaling the scope of the Japanese companies described below.

For the minority of Japanese companies that do capitalize SCI-I development costs, all the costs for software incurred at the "software factory" are included in the production cost of software. A vast majority of companies capitalized costs for systems design (90 percent), detail program design (93 percent), coding (87 percent), and testing (84 percent). More than half of the surveyed companies even capitalized systems analysis (62 percent), and one fifth (19 percent) capitalized implementation costs. Table 2 reports comparative lists of these results with US companies.

Table 2. Capitalized costs of software for those companies capitalizing costs constructed internally for internal use (SCI-U).

| Category of capitalized costs | United States 1984 ^a | | United States 1991 ^a | | Japan | |
|-------------------------------|---------------------------------|--------|---------------------------------|--------|----------|--------|
| | No. cos. | % | No. cos. | % | No. cos. | % |
| Feasibility costs | 12 | 48 | 2 | 33 | | |
| Systems analysis | | | 4 | 67 | 107 | 62 |
| Systems design costs | | | 4 | 67 | 154 | 90 |
| Design costs (detail design) | 24 | 96 | 5 | 83 | 159 | 92 |
| Coding costs | 22 | 88 | 6 | 100 | 149 | 87 |
| Testing costs | 22 | 88 | 6 | 100 | 144 | 84 |
| Product master | | | 3 | 50 | | |
| Duplication | — | — | — | — | | |
| Installation costs | — | — | 1 | 16 | 32 | 19 |
| Support costs | 12 | 48 | | — | — | — |
| Service costs | 8 | 32 | | — | — | — |
| Total (sample size) | 100 | 400 | 31 | 516 | 745 | 434 |
| | 25 | (100%) | 6 | (100%) | 174 | (100%) |

^a These are the data for application software of the users.^b The items of the surveys were different, such as feasibility study (1984 US) and systems design (Japan).

In summary, a vast majority of both US and Japanese companies expense SCI-I, although there is a portion of US firms in the sample (10 percent) that now capitalize almost all of these costs. Costs most often capitalized are design, coding, and testing in the United States. On the other hand, the scope for capitalization is wider in Japan (even with the tax incentive to expense) for not only system design, detail program design, coding and testing but often systems analysis as well.

We believe, based on these results as well as discussions with Japanese researchers and software engineers, that the primary reason for the difference in the scope of capitalization is differing perceptions of the development process. Because the Japanese focus on cost accounting, they are much less likely to view the development process as a set of sequential, linked steps which can be accounted for separately. They view the process as integrated and indivisible and account for it on that basis. This distinction would not necessarily be obvious when examining only a set of survey results since the survey respondents assign costs to the categories supplied by the researcher. In the case of software, it is easy for a knowledgeable software engineer/accountant to backflush his or her answers to fit the categories supplied since at a higher conceptual level they serve the same end as the actual steps used in the respondent's construction method.¹⁸

Capitalization or Expense for Costs of SCI-M

There were very diverse accounting practices used for SCI-U and SCI-M, especially in Japanese companies. Table 3 presents comparative results for companies in both countries. Japanese companies are much more likely to treat SCI-M as inventory than the 1984 sample of US companies. However, the 1991 sample of US companies had more aggressive capitalization practices. The difference in capitalization practices between SCI-U and SCI-M is readily revealed by comparing Table 2 with Table 4. More companies capitalize the costs for SCI-M than the costs for SCI-U, but the pattern of costs capitalized is the same.

Currently, there are three major views among accounting academics and practitioners on whether costs for SCI-M should be eligible for capitalization: first, that all software costs should be expensed as R&D expense; second, that only certain eligible costs incurred after technological feasibility has been established should be capitalized; and third, that all software costs for the R&D portion of the projects

Table 3. Capitalization expense of software costs for SCI-M

| Accounting treatment | US companies 1984 ^a | | US companies 1991 ^a | | Japanese companies | |
|---------------------------|--------------------------------|-----|--------------------------------|-----|--------------------|-----|
| | No. of cos. | % | No. of cos. | % | No. of cos. | % |
| Expense | 75 | 81 | 34 | 87 | 118 | 48 |
| Inventory | 4 | 4 | 13 | 33 | 86 | 35 |
| Other assets ^b | 9 | 10 | 22 | 56 | 35 | 15 |
| Others | 5 ^c | 5 | — | — | 6 | 2 |
| Total | 93 | 100 | 39 ^d | 176 | 245 | 100 |

^a Software vendors, not software users.

^b Other assets consist mainly of noncurrent assets.

^c Footnote disclosure.

^d sums to more than 39 due to multiple responses

Table 4. Capitalized costs of software for those companies capitalizing costs constructed internally for sale (SCI-M)

| Category of capitalized costs | US 1984* | | US 1991 | | Japan | | |
|---------------------------------------|----------|-------------|---------|-------------|-------|-------------|---|
| | Costs | No. of cos. | % | No. of cos. | % | No. of cos. | % |
| Feasibility costs | 2 | 15 | | | | | |
| Market research | | | 2 | 9 | 48 | 32 | |
| Systems research | | | 5 | 23 | 107 | 72 | |
| System design | | | 8 | 36 | 139 | 93 | |
| Design costs | 9 | 69 | | | | | |
| (Detail design costs) | | | 12 | 54 | 137 | 92 | |
| Coding costs | 12 | 92 | 19 | 86 | 136 | 91 | |
| Testing costs | 11 | 85 | 22 | 100 | 134 | 90 | |
| Product master | | | 14 | 64 | | | |
| Duplication | | | 3 | 14 | | | |
| Installation of software for customer | | | 1 | 4 | 46 | 31 | |
| Support costs | 2 | 15 | | | | | |
| Service costs | 0 | | | | | | |
| Others | 0 | | | | 20 | | |
| Total | 36 | 276 | 83 | 390 | 747 | 501 | |
| (sample size) | 13 | (100%) | 22 | (100%) | 149 | (100%) | |

Columns sum to more than 100% since there were multiple responses.

^a These data are from US vendors.

should be expended, while all costs for software construction activities (after definite technological feasibility is established) should be eligible for capitalization.

All-Expense View

Today the all-expense view is virtually obsolete but remains relevant for a few software projects. SFAS no. 2 took the all-expense approach. The theory behind the FASB Statement appears to be a doubt of future economic benefits of the software to the enterprise.

In the past, the all-expense view has been supported by most major computer makers with the exception of IBM. In the present survey almost half (46 percent) of the Japanese computer makers favor the all-expense treatment, and the balance (54 percent) want to capitalize the costs as inventory. No (0 percent) computer maker indicated a preference to capitalize software costs as non-current assets. The majority of US and Japanese computer makers construct systems and applications software on speculation in a way that has characteristics of a true R&D activity. That may be a major reason why they support this view. This is in sharp contrast to Japanese software houses and user companies, 20 percent of which preferred capitalization for costs of SCI-M as non-current assets, even in the face of the tax benefits of an expense treatment.

Capitalization of Designated Eligible Costs

There are three main concepts of what should be capitalized as an intangible asset: (1) capitalize coding and testing only; or (2) capitalize design, coding, and testing

only; or (3) capitalize the construction portion of the project (based on technological feasibility). The first two are very similar.

The first approach is to capitalize only coding and testing costs which are viewed as production costs and to expense systems analysis, systems design and detail design costs, which are viewed as R&D costs. SFAS no. 86 takes this view.

Costs for detail program design were excluded from the construction cost of software because they were characterized as a pre-manufacturing activity by many, including the FASB. Using the manufacturing production model raises the difficulty of pinpointing where the software construction process shifts from pre-production to production. Using a fixed asset construction model changes the nature of the accounting issues. Under the fixed asset production model there is no production/pre-production distinction and detailed design would be equivalent to the preparation of architectural plans in a building construction project which would not be considered an R&D activity. Viewing software construction in this way reveals that the manufacturing production model is not fully appropriate to software construction.

Both McGee's (1984) survey and the present results reveal that the categories of costs most frequently capitalized were detail program design, coding, and testing costs both in the United States and Japan. Table 4 reports the comparative results of these surveys.

A large majority of those Japanese software developers who capitalize software costs go so far as to capitalize systems design costs and very often even costs for systems analysis which are clearly regarded as R&D costs in the United States. There is also greater capitalization in the 1991 US survey than in the 1984 survey. It appears that the scope of capitalization is increasing in the United States, with some companies using capitalization schemes as comprehensive as seen in the Japanese sample. This expanded capitalization is discussed in the next section.

Separation of R&D from Construction

Conceptual separation of the R&D portion of the cost from the construction portion is the most theoretical view. It holds that the R&D cost of a project should be subjectively distinguished from the construction portion just as in the case of an industrial product. The R&D portion of the project may therefore primarily comprise costs for systems analysis but may also contain some costs for systems design, detail program design, and even coding and testing. Once technological feasibility is established the software cost capitalized should include *all* remaining production costs. The separation view is reflected in the results in Tables 2 and 4 for the Japanese respondents and for the 1991 US respondents. In both sets of results, those companies that capitalized began much earlier.

One pragmatic argument in favor of separating R&D cost from production cost is that the costs for detailed design, coding, and testing are usually only 40–50 percent of the software construction costs. Thus the gap between market price and capitalized cost becomes very large, often more than twice as large as the cost.¹⁹ As a result, asset book value may be useless as an aid to pricing decisions because it measures only a small portion of the construction costs.

Additionally, there is the problem of separating the cost components, as mentioned above. Because of technological developments in software engineering, the distinction between processes has become vague.

The present Japanese survey reveals that more than 90 percent of the respondents capitalizing software costs in Japan capitalize costs for both systems design and detail design, which is not explicitly allowed by the financial accounting standards of the United States. Further, more than 60 percent of the Japanese respondents even capitalized costs for systems analysis. The 1991 US survey shows that 36 percent of the companies capitalize systems design and 54 percent capitalize detailed design. Additionally, 23 percent capitalize systems analysis and 9 percent capitalize feasibility/market research costs. The results of these surveys indicate that a majority of Japanese companies and a number of US companies regard systems analysis as a production activity rather than an R&D activity.

Discussion and Conclusion

This paper discusses two facets of software that have a direct effect on the accounting treatment: construction risk and construction methods. A review of construction risk and construction methods in the late 1980s and early 1990s suggests that both are greatly altered during this period.

Although technological feasibility for SCI-I is the same as for SCI-M, in our transaction-focused accounting systems there is no revenue transaction to observe for most assets used in operations. Although the accounting profession has resolved this issue with respect to tangible assets, there has been difficulty in applying the same treatment to intangible assets even though the risks are the same.

The present analysis shows how the use of any model as an aid to accounting policy decisions may be problematic since it is inevitable that the model-to-object mapping is not exact. Software construction, in our view, is a mix between production and construction, thus in this paper we use aspects of both models to inform our views. As the software development process improves and becomes better understood, the weaknesses of using any metaphor to understand it will become apparent. At that point it will be necessary to develop a model of what software construction is rather than comparing it with something it is similar to. In other words, both existing models are deficient.

These observations were foreseen in the exposure draft by at least one unidentified FASB board member, who noted (para. 49), "...given the dynamic nature of the industry, a standard based on the nature of costs, which in turn is predicated on existing industry technology, can be rendered obsolete." In the final vote for SFAS no. 86, two members dissented; one of them, Donald Kirk, voiced essentially these same reservations and added a concern that the required period of R&D expenditure would capture a large portion of routine production activities. His views have proven to be correct.

There are two important differences in the assumptions used to derive the US and Japanese accounting methods: the *effectiveness* of the construction method (construction risk), and the *method* of construction (discrete steps vs. integrated process).

We feel that more companies will begin capitalizing software development costs in the future as the magnitude of the costs increases and it becomes worthwhile to trace them to their ultimate use. Additionally, as advanced software construction methods become widely practiced, the apparent construction risk will decline in the United States, as it has in Japan, and lead to a reappraisal of what is, by its nature, capitalizable.

By comparing the accounting systems in these two very different countries, we increase the intensity of the examination and highlight the effect of assumptions in the development of techniques. A second-order result of this study is confirmation that understanding international business is relevant to a mature understanding of domestic business.

Acknowledgement: We are extremely grateful to Professor Philip Bell for his many comments on various revisions of this paper. The data gathered for this study are available on request from Paul Scarbrough at Bentley College.

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2. Pridemore, Charles, "Development Costs: Expense or Capitalize?" *Management Accounting*, (November 1983), 33-36.
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4. If 25% of the total is the construction cost of the building and robots and 75% is for software, then using an estimate that approximately 40% of the software development cost ($40\% \times 75\% = 32\%$) would be capitalized under SFAS 86, we compute a total of $25\% + 32\% = 57\%$.
5. Sakurai, Michiharu, *Software Genka Keisan: Genka Kanri, Kakaku Keitei, oyobi Sisan Keijou* (Software Cost Accounting: For Cost Control, Pricing and Capitalization) (Tokyo: Hakutousyobou, 1987), 176.
6. A reference to the arrangement of sashimi (raw fish) at a sushi bar, which we understand was made by Professor Yotaro Kobayashi during a presentation in Japan. Sashimi is served in offset overlapping layers, such that Figure 1(a) resembles a cross section of a sashimi presentation.
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18. This is a good example of the underlying assumptions of the research design possibly influencing the results. For example, without the interviews which accompanied the current studies, it would not have

been apparent that a response of 100% capitalization of detail design, coding, and testing may really be an indication that the one step of production was capitalized.

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Students' Perceptions of the Usefulness of International Accounting Course Contents: An Australian Study

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Key words: Careers; Gender; Rankings; Students; Topics; Usefulness

Abstract: Students who completed a course in International Accounting were asked to evaluate, in relation to their career aspirations, the usefulness of the course contents. The mean scores of students' perceived usefulness of each of the topics taught were used for ranking the topics. The seven highest ranks were generally identical for both male and female students and there were no statistically significant differences in the mean scores and variances between the two groups. When the sample was categorized into aspired career groups, the derived rankings for the six topics considered most useful generally showed little variation between the groups.

The inclusion of International Accounting as part of the accreditation requirements of the American Assembly of Collegiate Schools of Business (AACSB) since 1974 has given it the desired impetus and prominence within the business and accountancy curricula of business schools and universities in the United States. In the United Kingdom, the teaching of International Accounting is not compulsory but related topics are often included as an extension in the undergraduate program. In Australia, International Accounting is not a pre-requisite for membership of the professional accounting bodies and, consequently, it is included within the degree programs of only a few universities, particularly at the postgraduate level.

In the case of Griffith University in Brisbane, Australia, International Accounting has been taught as a compulsory course within the three-year Bachelor of International Business Relations (IBR) degree program since 1990. The IBR degree program is designed to prepare business students for careers within the international business arena. Students are required to complete a first year introductory accounting course which forms the pre-requisite for International Accounting studied in their second year. Griffith University was a pioneer in introducing International Accounting to undergraduate students within Australia.

Since the first course in International Accounting commenced in the United States at the University of Illinois at Urbana-Champaign in 1963, universities have evolved different pedagogic objectives which are reflected in the design of their International Accounting courses. These differences may be due in part to varying definitions of International Accounting and the alternative approaches to teaching the course.¹ Rueschhoff suggested that a course in International Accounting should include financial accounting for international operations; multinational managerial accounting and control; comparative international accounting principles; and international financial reporting.² Kubin indicated that "there seems to be no single, ideal approach to education in international accounting".³ However, he suggested that when developing an International Accounting course, the objectives should address: (1) the students' needs; (2) the course as an integrated part of the degree program; (3) future graduate employers' perceptions of international accounting problems; and (4) the lecturer's perception of the educational direction to pursue to mitigate the international accounting problems. To neglect any of these four considerations may threaten the viability of an International Accounting course.⁴

Since 1973, various studies have been done particularly in the United States, Canada, and the United Kingdom to determine what topics should be covered within the International Accounting course, the time allocated to each topic, and teaching methods and materials. The studies that have presented rankings of international accounting topics in terms of their relative importance are listed in Table 1.

Most of the studies indicate the following topics as being very important: foreign currency translation; the role and development of international accounting standards; international harmonization of accounting standards; international taxation; accounting for inflation; financial disclosure and reporting; planning and controlling the international operations of multi-national corporations (MNCs); financial risk management; performance evaluation in a multi-cultural environment; and transfer pricing for global businesses.

Purpose of the Research

While the North American and British studies used participants who would satisfy Kubin's third and fourth considerations, in that they addressed and tested academics' and corporate executives' preferences for the various topics within International Accounting courses, hardly any considered the needs of students as suggested in Kubin's first consideration. To date, in Australia, only Faux looked at students' perceptions of the importance of international accounting topics. The students surveyed by Faux were final year accounting-major undergraduates who had not studied International Accounting as a course.

The limited empirical research done to date on students' perceived needs in relation to International Accounting was a primary motivation for our research. The basic objective of the research was to test students' perceptions of the usefulness of the topics contained in the International Accounting course, in relation to their career aspirations. It is hoped that the results would provide useful input to designers and

Table 1. Prior research studies that ranked international accounting topics in terms of relative importance

| Studies (year), country | Subjects (usable responses for ranking of topics) | Three highest ranked topics |
|---|--|--|
| Dascher, Smith and Strawser (1973), US ⁵ | MNC controllers (93) | 1. Foreign Currency Translation 2. International Taxation 3. Accounting Methodology Differences |
| | Accounting faculty heads (90) | 1. Foreign Currency Translation 2. Accounting for Inflation 3. Patterns of Accounting Development |
| Burns (1979), US ⁶ | AAA international accounting section members and accounting faculty heads (36) | 1. Comparative Accounting Principles 2. Foreign Currency Translation 3. Transfer Pricing and Taxation |
| Mintz (1980), US ⁷ | AAA international accounting section members and accounting faculty heads (35) | 1. Comparative Standards and Harmonization 2. Foreign Currency Translation 3. Financial Reporting and Disclosure |
| Agami (1983) US, Canada UK and NZ ⁸ | University faculties (31) | 1. Foreign Currency Translation 2. International Accounting Standards 3. International Taxation |
| Gray and Roberts (1984), UK ⁹ | University faculties (13) | 1. Comparative Standards 2. Culture and Accounting 3. International Finance |
| Sherman (1987), US ¹⁰ | Accounting faculty heads (129) | 1. Foreign Currency Translation 2. Accounting for Inflation 3. Controlling the Operation and Performance Evaluation of Subsidiaries |
| Stout and Schweikart (1989), US ¹¹ | Accounting faculty staff (183) practising accountants (288) (Overall ranking) | 1. Foreign Currency Translation 2. Transfer Pricing 3. Comparative Accounting Standards |
| Faux (1991), Australia ¹² | Accounting and law faculty staff (18) | 1. International Accounting Standards 2. Financial Reporting in Specific Countries 3. International Finance |
| | Accounting students (23) | 1. Foreign Currency Translation 2. International Accounting Standards 3. International Finance |
| Herremans and Wright (1992), Canada ¹³ | Chief financial officers and controllers of firms (59) | <i>Undergraduate curriculum</i> 1. Foreign Currency Translation 2. Comparative Financial Accounting Practices 3. Cash and Working Capital Management <i>MBA curriculum</i> 1. Performance Evaluation of Foreign Operations 2. Foreign Exchange Risk Management 3. Foreign Investment Analysis |

teachers of International Accounting courses not only within Australia but also internationally.

Participants

The participants for this research were undergraduate students who had actually completed the International Accounting course within their IBR degree program at

Griffith University. The time of their successful completion of the course was either in the first semester of 1990, the first semester of 1991, or the first semester of 1992.

Methodology

The research instrument used was a questionnaire which required the participants to indicate on a scale ranging from 1 (not useful) to 5 (always useful) their perception of the usefulness of each of the topics taught in the International Accounting course in relation to their personal career aspirations. Under each of the 14 topic headings, a brief description of the material taught was given to assist the participants' recall ability and to improve the internal validity of the instrument. The questionnaire also required each participant to provide some personal information, including a statement about his or her intended career. The participants were assured that strict confidentiality would be maintained throughout our study.

The questionnaire was administered in November 1991 to students who had completed the International Accounting course in 1990 and 1991. The same questionnaire was again administered in mid-1992 to other students who had completed the course that year. Each student completed the questionnaire independently and usable responses from 222 students were obtained overall.

The order of the topic headings in the questionnaire corresponded to the order of the 14 weekly lectures and tutorials for the course. Each topic was given equal duration and emphasis when taught to the students. The assessment items for the course placed equal weighting on each of the topics. There were no changes in the course syllabus, course materials, and mode of instruction over the three years of this study.

Data Analysis, Results and Discussion

For the analysis of the data, the sample was initially classified into two groups by gender. There were 85 male students with an average age of 22.9 years and 137 female students with an average age of 20.8 years. This grouping was necessary to test for any differences in overall perceptions between male and female students given the two-year difference in average ages of the two groups and the probable differences in job aspirations between the two groups.

Using the SAS statistical software package, the overall mean scores for each topic were computed for the 222 students and the topics were then ranked in order of perceived usefulness. The higher the mean score, the higher was the perceived usefulness and consequently the higher the rank of that topic. The mean scores for each of the topics for the two groups, i.e., male and female students, were then computed and the corresponding rankings were obtained by reference to the mean scores. The mean scores and corresponding standard deviations for each of the topics (in the order in which they appeared on the questionnaire) for the two groups are given in Appendix A. The rankings of the topics for the two groups are given in Table 2.

The rankings of the seven topics perceived to be most useful were identical for the two groups of students, except for a transposition of ranks 3 and 4 for female students. There were only minor variations in the rankings of the rest of the topics between the two groups. "International Monetary System and Exchange Rates" clearly emerged as the topic perceived to be most useful, followed by "Foreign Currency Transaction", "Foreign Risk Management", and "Foreign Currency Translation", in that order. A direct comparison with the rankings from previous studies is not always possible owing to the differences in classification of subject matter under topic headings; nevertheless, some interesting comparisons can be made. "Foreign Currency Translation", for example, ranks highly in most of the other studies as it does in this study. The decreasing trend in the relative importance of comparative accounting principles as observed by Stout and Schweikart is reflected in this study.¹⁴

To test whether the sample variances of the two groups were homogeneous, an *F*-test was conducted for the two groups by topics. As seen in Table 2, the results showed no significant differences between the sample variances for the two groups.

Table 2. Rankings of topics in terms of perceived usefulness

| Topics | Overall ranking | Ranking by males | Ranking by females | <i>F</i> ratio | <i>t</i> value |
|--|-----------------|------------------|--------------------|----------------|----------------|
| International Monetary System and Exchange Rates | 1 | 1 | 1 | 1.23 | 1.24 |
| Foreign Currency Transaction | 2 | 2 | 2 | 1.10 | 1.09 |
| Foreign Risk Management for MNCs | 3 | 3 | 4 | 1.06 | 1.57 |
| Foreign Currency Translation | 4 | 4 | 3 | 1.19 | 0.46 |
| International Taxation | 5 | 5 | 5 | 1.10 | 0.45 |
| Investment Analysis in MNCs | 6 | 6 | 6 | 1.17 | 0.42 |
| International Financial Planning, Control and Performance Evaluation | 7 | 7 | 7 | 1.19 | 0.37 |
| International Transfer Pricing | 8 | 8 | 9 | 1.08 | 1.30 |
| Accounting for Inflation | 9 | 9 | 10 | 1.00 | 0.66 |
| Dimensions and Conceptual Developments of International Accounting | 10 | 12 | 8 | 1.25 | -0.94 |
| Accounting for Consolidation of MNCs | 11 | 10 | 13 | 1.12 | 0.45 |
| Financial Reporting and Disclosure of MNCs | 12 | 11 | 12 | 1.12 | -0.28 |
| Comparative Studies: Standard Setting and Major Practices | 13 | 13 | 11 | 1.04 | -1.88 |
| Classification and Harmonization of Diversified Accounting Practices | 14 | 14 | 14 | 1.21 | -0.17 |

A *t*-test was performed for comparing the mean scores obtained for the two groups for each of the topics. Again, as seen in Table 2, the results showed no significant differences in the mean scores for each topic between the two groups.

As the next step in the analysis, the sample of 222 students was classified into nine groups in relation to their aspired careers, including a group for those who were undecided about their careers and another group labeled "Others" for miscellaneous responses. The breakdown of the responses was as follows:

| <i>Career group</i> | <i>Male</i> | <i>Female</i> | <i>Total</i> |
|---|-------------|---------------|--------------|
| Banking, Accounting and Finance | 28 | 22 | 50 |
| Import/Export | 22 | 18 | 40 |
| Tourism and Travel | 4 | 29 | 33 |
| Undecided | 9 | 23 | 32 |
| Marketing | 8 | 13 | 21 |
| Foreign Affairs and Diplomatic Missions | 4 | 16 | 20 |
| Management in MNCs | 6 | 7 | 13 |
| Others | 4 | 9 | 13 |

Under "Others", careers specified included business consultancy, language teaching, and language translation. Thirty-two students were undecided about their careers

"Banking, Accounting and Finance", "Import/Export", and "Tourism and Travel" emerged as the three most aspired career categories. It is interesting to note that more male than female students favored "Banking, Accounting and Finance" and "Import/Export", whereas more female than male students favored "Tourism and Travel", "Marketing", and "Foreign Affairs and Diplomatic Missions".

The mean scores for each of the 14 topics within each of the nine groups were computed and the corresponding ranking in the order of perceived usefulness was obtained for each group. The mean scores and the corresponding standard deviations for each of the topics (in the order in which they appeared on the questionnaire) are given in Appendix B. The rankings of topics within the career groups are given in Table 3.

It is clear that "International Monetary System and Exchange Rates" ranks the highest for each career grouping, except for the MNC Managerial group where it ranks second to "Foreign Currency Transaction". By and large, "Classification and Harmonization of Diversified Accounting Practices" ranked lowest for most of the groups.

Some general observations can be made from Table 3. There seems to be little variation in what the students considered to be the six most useful topics, despite the differences in their career aspirations. The variations that are noteworthy are that students in the MNC Managerial group consider "International Financial Planning, Control and Performance Evaluation" and "International Transfer Pricing" very useful but those in the Foreign Affairs and Diplomatic Missions group consider these topics less useful. Likewise, those in the Import/Export group do not consider "International Financial Planning, Control and Performance Evaluation" highly useful. "International Transfer Pricing" is not considered highly important by those in the Tourism and Travel group.

Table 3. Rankings of perceived usefulness of topics in relation to career aspirations

| | Overall n=222 | Banking, Accounting and Finance n=50 | Import- Export n=40 | Tourism and Travel n=33 | Marketing n=21 | Foreign Missions n=20 | MNC Managerial n=13 | Other Careers n=13 | Undecided n=32 |
|--|------------------|---|---------------------------|-------------------------------|-------------------|-----------------------------|---------------------------|--------------------------|-------------------|
| International Monetary System and Exchange Rates | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 |
| Foreign Currency Transaction | 2 | 2 | 2 | 2 | 2 | 5 | 1 | 3 | 2 |
| Foreign Risk Management for MNCs | 3 | 3 | 4 | 3 | 3 | 7 | 3 | 4 | 5 |
| Foreign Currency Translation | 4 | 4 | 3 | 4 | 4 | 6 | 4 | 2 | 3 |
| International Taxation | 5 | 5 | 6 | 7 | 6 | 4 | 7 | 5 | 6 |
| Investment Analysis in MNCs | 6 | 6 | 5 | 6 | 5 | 2 | 8 | 6 | 7 |
| International Financial Planning, Control and Performance Evaluation | 7 | 7 | 10 | 5 | 8 | 11 | 5 | 10 | 4 |
| International Transfer Pricing | 8 | 8 | 9 | 11 | 7 | 10 | 6 | 7 | 11 |
| Accounting for Inflation | 9 | 10 | 7 | 10 | 10 | 9 | 11 | 13 | 10 |
| Dimensions and Conceptual Developments of International Accounting | 10 | 13 | 8 | 8 | 13 | 3 | 13 | 10 | 9 |
| Accounting for Consolidation of MNCs | 11 | 9 | 12 | 13 | 12 | 8 | 10 | 12 | 8 |
| Financial Disclosure and Reporting of MNCs | 12 | 11 | 13 | 12 | 9 | 12 | 9 | 14 | 12 |
| Comparative Studies: Standard Setting and Major Practices | 13 | 12 | 11 | 9 | 11 | 14 | 12 | 8 | 13 |
| Classification and Harmonization of Diversified Accounting Practices | 14 | 14 | 14 | 14 | 14 | 13 | 14 | 8 | 14 |

Conclusion and Further Research

Generally, gender and career aspirations do not significantly affect students' overall perceptions of the usefulness of the topics taught in International Accounting. The six topics regarded as being the most useful overall, in rank order, are: international monetary system and exchange rates; foreign currency transaction; foreign risk management for MNCs; foreign currency translation; international taxation; and investment analysis in MNCs.

It is anticipated that the findings would be immensely useful to other universities and business schools considering the introduction of International Accounting or which are already teaching it. The results of this study provide useful guidance on where emphases should be placed when designing an International Accounting course or when introducing international accounting components into existing accounting subjects.

The career aspirations of the students in this research give a further dimension that could be considered when designing and marketing an International Accounting course. Needless to say, the results of this study have to be read in conjunction with the fact that the students in the sample are from one particular university and that these are business students who are generally non-accounting majors.

A further direction for research within the Australian environment would be to investigate the perceptions of the international business community (i.e., future employers of graduates) of the degree of relevance they would attach to each of the topics covered within a typical International Accounting course.

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Appendix A: Mean Scores and Standard Deviations (in Parentheses) of Perceived Usefulness of Topics by Gender

| | Overall n=222 | Males n=85 | Females n=137 |
|--|------------------|---------------|------------------|
| Dimensions and Conceptual Developments of International Accounting | 3.38 (0.90) | 3.31 (0.96) | 3.42 (0.86) |
| Comparative Studies: Standard Setting and Major Practices | 3.27 (0.84) | 3.14 (0.85) | 3.36 (0.83) |
| Classification and Harmonization of Diversified Accounting Practices | 3.13 (0.96) | 3.12 (0.91) | 3.14 (1.00) |
| International Monetary System and Exchange Rates | 4.36 (0.71) | 4.44 (0.66) | 4.31 (0.74) |
| Foreign Currency Transaction | 4.06 (0.84) | 4.14 (0.82) | 4.01 (0.86) |
| Foreign Currency Translation | 3.87 (0.93) | 3.91 (0.88) | 3.85 (0.96) |
| Accounting for Inflation | 3.40 (0.91) | 3.45 (0.91) | 3.36 (0.91) |
| Accounting for Consolidation of MNCs | 3.36 (1.02) | 3.40 (1.06) | 3.34 (1.00) |
| Financial Disclosure and Reporting of MNCs | 3.33 (0.94) | 3.31 (0.91) | 3.34 (0.97) |
| Foreign Risk Management for MNCs | 3.89 (0.93) | 4.01 (0.94) | 3.81 (0.92) |
| Investment Analysis in MNCs | 3.68 (0.91) | 3.72 (0.96) | 3.66 (0.89) |
| International Financial Planning, | | | |
| Control and Performance Evaluation | 3.59 (0.91) | 3.62 (0.86) | 3.58 (0.94) |
| International Transfer Pricing | 3.44 (0.90) | 3.54 (0.92) | 3.38 (0.88) |
| International Taxation | 3.69 (0.93) | 3.73 (0.90) | 3.67 (0.95) |

Appendix B: Mean Scores and Standard Deviations (in Parentheses) of Perceived Usefulness of Topics in Relation to Students' Career Aspirations

| | Overall n=222 | Banking, accounting and finance n=50 | Import/ export n=40 | Tourism and travel n=33 | Marketing n=21 | Foreign missions n=20 | MNC managerial n=13 | Other careers n=13 | Undecided n=32 |
|--|------------------|---|---------------------------|-------------------------------|-------------------|-----------------------------|---------------------------|--------------------------|-------------------|
| Dimensions and Conceptual Developments of International Accounting | 3.38 (0.90) | 3.26 (0.92) | 3.45 (0.85) | 3.39 (1.06) | 3.05 (0.97) | 3.65 (0.59) | 3.62 (0.87) | 3.38 (1.04) | 3.41 (0.84) |
| Comparative Studies: Standard Setting and Major Practices | 3.27 (0.84) | 3.30 (0.91) | 3.38 (0.81) | 3.24 (0.97) | 3.24 (0.70) | 3.10 (0.72) | 3.62 (0.65) | 3.38 (0.96) | 3.09 (0.82) |
| Classification and Harmonization of Diversified Accounting Practices | 3.13 (0.96) | 3.24 (0.82) | 3.15 (1.00) | 2.88 (1.08) | 3.00 (0.95) | 3.11 (1.10) | 3.46 (1.05) | 3.38 (0.96) | 3.06 (0.88) |
| International Monetary System and Exchange Rates | 4.36 (0.71) | 4.54 (0.58) | 4.40 (0.74) | 4.09 (0.68) | 4.33 (0.66) | 4.15 (1.04) | 4.38 (0.65) | 4.38 (0.77) | 4.44 (0.62) |
| Foreign Currency Transaction | 4.06 (0.84) | 4.28 (0.70) | 4.10 (0.71) | 3.76 (0.97) | 4.05 (0.80) | 3.65 (1.23) | 4.46 (0.52) | 3.85 (0.80) | 4.19 (0.78) |
| Foreign Currency Translation | 3.87 (0.93) | 4.08 (0.75) | 3.88 (0.79) | 3.64 (0.90) | 3.67 (0.97) | 3.55 (1.32) | 4.00 (0.91) | 3.92 (0.95) | 4.03 (1.03) |
| Accounting for Inflation | 3.40 (0.91) | 3.54 (0.79) | 3.48 (0.99) | 3.21 (0.96) | 3.33 (0.97) | 3.35 (0.99) | 3.62 (0.51) | 3.15 (1.14) | 3.34 (0.87) |
| Accounting for Consolidation of MNCs | 3.36 (1.02) | 3.56 (0.86) | 3.37 (1.13) | 3.00 (1.06) | 3.05 (0.86) | 3.45 (1.32) | 3.69 (0.75) | 3.31 (1.03) | 3.44 (1.01) |
| Financial Disclosure and Reporting of MNCs | 3.33 (0.94) | 3.48 (0.93) | 3.25 (1.15) | 3.12 (1.05) | 3.43 (0.75) | 3.30 (1.03) | 3.69 (0.48) | 3.08 (1.04) | 3.31 (0.69) |
| Foreign Risk Management for MNCs | 3.89 (0.93) | 4.22 (0.71) | 3.88 (1.11) | 3.76 (1.00) | 3.76 (0.70) | 3.50 (1.05) | 4.23 (0.73) | 3.85 (0.90) | 3.72 (0.96) |
| Investment Analysis in MNCs | 3.68 (0.91) | 3.82 (0.77) | 3.73 (0.99) | 3.48 (0.87) | 3.62 (0.97) | 3.80 (1.15) | 3.77 (0.83) | 3.69 (0.95) | 3.56 (0.91) |
| International Financial Planning, Control and Performance Evaluation | 3.59 (0.91) | 3.74 (0.90) | 3.43 (0.84) | 3.61 (1.00) | 3.48 (0.68) | 3.35 (1.14) | 3.92 (0.95) | 3.38 (1.05) | 3.75 (0.76) |
| International Transfer Pricing | 3.44 (0.90) | 3.58 (0.86) | 3.45 (0.90) | 3.15 (0.97) | 3.52 (0.75) | 3.35 (1.04) | 3.85 (0.69) | 3.46 (0.88) | 3.34 (0.94) |
| International Taxation | 3.69 (0.93) | 3.96 (0.78) | 3.60 (1.08) | 3.48 (1.06) | 3.57 (0.60) | 3.65 (1.04) | 3.77 (0.60) | 3.77 (1.01) | 3.66 (0.97) |

Accounting Competence, Machiavellianism, and Budget-Related Behavior: A Comparative Study of US and Spanish Managers

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Key words: Budget behavior; US and Spanish managers; Accounting competence; Machiavellianism

Abstract: Previous studies have demonstrated the usefulness of individually oriented constructs in explaining intra-national variation in managers' budget-related attitudes and behavior. International variation in budget-related behavior may be attributable to differing social values. Two fundamental research questions arise: (1) how do managers' budget-related behaviors differ from country to country? and (2) what constructs are useful in explaining variation in these behaviors? In gathering data to answer these questions, an English version of a questionnaire was administered to 55 US managers and a Spanish version of the same questionnaire was completed by 44 managers in Spain. The questionnaire measured each subjects' accounting competence, Machiavellian tendencies, and perceptions regarding the frequency and effectiveness of a number of budget-related behaviors. Simple tests for differences in the responses between the two groups were performed to identify which behaviors varied internationally and regressions were performed to identify which of the explanatory constructs were useful in explaining variation in the responses. The Spanish managers reported more frequent use and more effective results of four budget-related behaviors: Portrays Hardship, Uses Projections, Combines Small Items, and Uses "Foot in the Door" Approach. In addition to the explanatory value of nationality, accounting competence was useful in explaining variation in Uses Projections, and dimensions of the subjects' Machiavellian tendencies were found to be related to the three other behaviors.

The globalization of business has resulted in many new challenges for business managers and the designers of information systems. Fundamental differences in the environments in which businesses operate necessitate different approaches to management. Cultural differences suggest variation in managerial style. Thus, the

information requirements of managers are likely to vary from country to country and the ways managers view and use information are likely to vary as well. It is important for the designers and users of information systems to be aware of international differences in designing numerous systems such as financial reporting, human resource management, and others; but of particular relevance to accountants are international differences in the ways managers use budgeting as a managerial tool.

Studies of managers' attitudes toward budgets and budgeting have been single-nation studies and have focused on a variety of individually oriented variables and personality traits such as leadership style, locus of control, and role stress. For example, Hopwood,¹ Otley,² and Brownell³ studied the relationship between leadership style and budgeting practices and reported mixed results. Brownell investigated the effect of locus of control on the relationship between participation in budgeting and organizational effectiveness (performance) and found participation to have a positive effect on the performance of internals and a negative effect on the performance of externals.⁴ The results of an experiment reported by Licata et al., suggest that internal managers allow subordinates greater participation in budgeting than do external managers.⁵ Others have studied the relationship between role stress and budgetary attitudes.⁶

In addition to individually oriented explanatory variables, there are a number of physical environment factors with the potential of explaining variation in managers' budget-related attitudes and behaviors. As presented by Hofstede⁷ and illustrated as Figure 1, these physical environment factors are the result of the forces of man and nature and serve as the origins of "societal values". There are a number of consequences of societal values (such as business ownership and organization) that will tend to be formed to reinforce societal values.⁸ Like individually oriented constructs, physical environment factors vary within and among countries. With an increase in international business relationships, the international aspects of organizational phenomena must be considered. Since variation in physical environment factors is reflected in

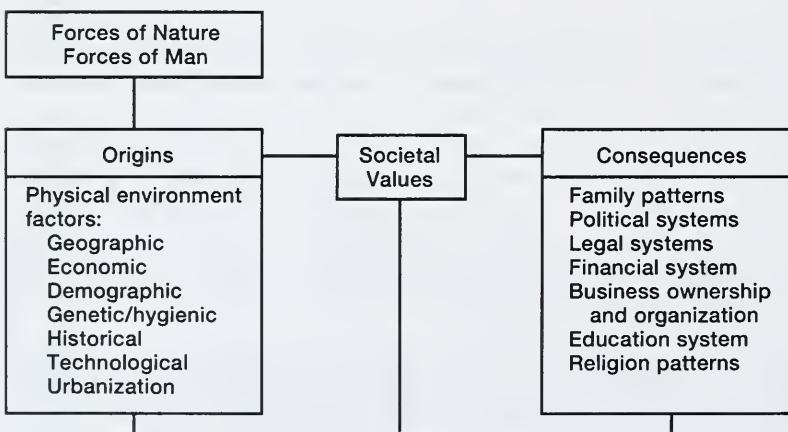


Fig. 1. Source: G. Hofstede, *Culture's Consequences*, Beverly Hills, CA: Sage Publications, 1980.

differences in societal values, variation in societal values may explain much of the variation in the design and use of business systems from country to country.

Societal values, as reflected in an individual's personal dispositional structure, are difficult constructs to measure. Pandey suggests that in a developing society where resources are limited, manipulative behavior may be present.⁹ Thus, a measure of manipulative behavior may reflect societal values. The manipulative behavior evaluated in this study, Machiavellianism, is present in organizational as well as social structures. This trait would influence managers' attitudes and may be indicative of an influence of societal values on business ownership and organizational structure. Machiavellianism is of interest as a personality trait that considers the manipulative behavior of individuals. Manipulative behaviors are of interest since the budget can be used as a tool for manipulating others. The objective of the use of this variable is to determine if Machiavellian characteristics influence a manager's frequency and perceived effectiveness of budgeting behavior.

Another individually oriented construct, accounting competence, is also investigated to determine if individuals who perceive themselves as highly competent tend towards specific budgetary behavior. Snowball¹⁰ suggests that high levels of accounting competence provide a greater appreciation of the sensitivity of accounting information. Therefore, managers with higher levels of accounting competence may be more (or less) likely to engage in certain budget-related behaviors.

Budget Related Behavior

In a study of Japanese and US controllers and managers, Daley et al. reported that the Japanese managers prefer less participation, use a longer planning horizon, view budgets as a communication device, and prefer more budget slack than US managers.¹¹ Cultural differences were not directly addressed; however, budgeting behavior and budgeting influence on the organizational structure were considered significantly different for many of the constructs that Daley et al. addressed. Schweikart addressed the influence of accounting information on a multinational corporation and reported that formal information was preferred over informal information by some countries and that environmental factors and information differences were small for various types of information.¹²

In this study, 10 questions regarding specific budget-related activities were developed to measure managers' perceptions of both the frequency and effectiveness of budget-related behavior. If the analysis was limited to the perceived effectiveness of a specific behavior, this would not necessarily indicate that the behavior was actually applied. Similarly limiting the analysis to frequency of occurrence would not reflect the perceptions of the managers with respect to outcome. These 10 questions are stated verbatim in Table 1 and will be referred to in the following discussions as they have been "abbreviated" below:

- (1) Provides Supporting Data
- (2) Uses Formal Proposals
- (3) Portrays Hardship

Table 1. Budget-related behaviors: Individual survey items

1. To get what I want in my financial plans, I support my requests with appropriate facts and figures
2. I rely heavily on formal proposals to direct the attention of my financial needs
3. I get what I want in my financial plans by letting others think my department is experiencing financial hardships
4. I make detailed and convincing projections in support of my financial requests
5. I combine items that would likely be cut from the plans if submitted separately with other items that are certain to be approved
6. I encourage others to observe my operations so they can see my financial plans are justified
7. I try to get what I want in my financial plans verifying that my requests are cost effective
8. I rely on personal relationships with others to get what I want in my financial plans
9. When seeking initial approval for a financial item, I ask for a small amount knowing that it is easier to increase the amount once the request is in the plan
10. I place some items in my financial plan which I know will not be approved so that those requests will be cut instead of items I really want approved

| Budget behavior (for each question) | I often do this | | | | | | I never do this | |
|-------------------------------------|-----------------|----------------|---|---|---|---|------------------|--|
| | 7 | 6 | 5 | 4 | 3 | 2 | 1 | |
| and "This behavior is" | | Very effective | | | | | Very ineffective | |
| | 7 | 6 | 5 | 4 | 3 | 2 | 1 | |

- (4) Uses Projections
- (5) Combines Small Items
- (6) Encourages Observation
- (7) Stresses Cost Effectiveness
- (8) Uses Personal Relationships
- (9) Uses “Foot in the Door” Approach
- (10) Postures for Negotiation

Machiavellianism

Environmental factors considered by Schweikart addressed specific business and cultural differences of the country in which the multinational corporation was located.¹³ Some personal, social, and political skills applied by individuals in organizations are representative of the personality trait referred to as Machiavellianism, a construct that has been examined extensively in the psychology literature.¹⁴ High Machiavellians are manipulative, aggressive, and exploitative.¹⁵ They engage in strategies characterized by deceitfulness, scheming tactics, and rigidity.¹⁶ Low Machiavellians are ethical, candid, and sensitive to the needs of others.¹⁷ Mudrach states: “Machiavellianism may be an important individual difference variable that helps determine the way people respond to organizational settings”.¹⁸ The organizational setting of interest in this manuscript is the budget environment. The Mach IV scale used to measure Machiavellianism in this study consists of 20 statements based on works of Machiavelli that were developed by Christie and Geis.¹⁹

To minimize response bias, 10 items are worded to indicate Machiavellian behavior with a positive response and 10 are worded in the opposite direction. The scale

Table 2. Machiavellianism

| | Classification |
|--|----------------|
| 1. When you ask someone to do something for you, it is best to give the real reason for your request | Tactics* |
| 2. It is best to be candid with people at all times | Tactics* |
| 3. Never feel compelled to explain your actions unless you feel it is useful to do so | Tactics |
| 4. Anyone who has complete confidence in anyone else is asking for trouble | Tactics |
| 5. It is sometimes necessary to flatter important people | Tactics |
| 6. The best way to handle people is to tell them what they want to hear | Tactics |
| 7. One should take action only when sure such action is morally right | Tactics* |
| 8. It is possible to be good in all respects | Tactics* |
| 9. There is no excuse for dishonesty | Tactics |
| 10. It is difficult to succeed without cutting corners here and there | Views |
| 11. It is safe to assume that most people will act maliciously if given a chance | Views |
| 12. Barnum was very wrong when he said that a sucker is born every minute | Views* |
| 13. Most people are basically good and kind | Views* |
| 14. Most individuals value their possessions more than their family relationships | Views |
| 15. Most people who get ahead in the world live honest lives | Views* |
| 16. Generally speaking, people do not work hard unless they are forced to | Views |
| 17. The biggest difference between most criminals and other people is that criminals are stupid enough to get caught | Views |
| 18. Most individuals are brave | Views* |
| 19. People suffering from incurable diseases should have the choice of being put painlessly to death | Morality |
| 20. In general, it is better to be humble and honest than important and dishonest | Morality* |

*indicates an item has been reverse scored.

Source: R. Christie and R. Geis, *Studies in Machiavellianism* (New York: Academic Press, 1970).

contains nine statements categorized as “Machiavellian tactics”. For example, “Never feel compelled to explain your actions unless you feel it is useful to do so”. Nine other statements are viewed as Machiavellian “views of human nature”. For example, “It is safe to assume that most people will act maliciously if given a chance”. The final two statements are “abstract morality”. For example, “People suffering from incurable diseases should have the choice of being put painlessly to death”. Table 2 contains the 20 Mach IV questions.

Accounting Competence

The level of accounting competence possessed by an individual may influence the budgeting behavior of an individual.²⁰ An adaptation of Holly et al.’s self-concept scale was used in measuring accounting competence in this study.²¹ Similar adaptations have been used to measure self-concept of mathematical, English, social science, and natural science abilities.²² The instrument presents five statements regarding an individual’s perception of their accounting competence in the budgeting process (see Table 3).

Table 3. Machiavellianism and accounting competence tests for differences between groups

| | Mean responses | | <i>t</i> -test level of significance |
|--|----------------|-------------------|--|
| | US | Spanish | |
| <i>Competence</i> | | | |
| 1. I feel comfortable helping others interpret financial figures and reports | 4.95 | 5.40 | 0.11 |
| 2. I am often frustrated by the complexity of the financial figures and reports I work with | 4.54 | 4.67 | 0.69 |
| 3. Working with financial figures and reports comes easy to me | 4.64 | 4.96 | 0.23 |
| 4. I wish that I had a stronger background in the technical aspects of the budgeting process | 4.66 | 6.02 | 0.00 |
| 5. People often consult me for my technical expertise in financial planning | 4.64 | 4.42 | 0.47 |
| <i>Machiavellianism (dimensions)</i> | | | |
| 1. Tactics (mean of 9 questions) | 3.62 | 3.66 | 0.79 |
| 2. Views (mean of 9 questions) | 3.49 | 3.86 | 0.01 |
| 3. Morality (mean of 2 questions) | 3.97 | 3.06 | 0.00 |
| Scale(s): | | | |
| Strongly agree | | Strongly disagree | |
| 7 | 6 | 5 | 4 |
| | | 3 | 2 |
| | | | 1 |

Expected Relationships Among Variables

The first area of interest in this manuscript is whether there are significant differences between the US and Spanish managers for these 10 behaviors and for the Machiavellian and accounting competence measures. Specifically, 28 hypotheses could be constructed to specify the expected differences in responses between the two groups (10 each for the related frequency and effectiveness measures; three for Machiavellian views, tactics, and morality; and five for aspects of accounting competence). Specific hypotheses are not stated, however, because of our inability to *a priori* suggest directionality. In this exploratory effort, simple tests for differences in the responses will be used to identify relationships for more rigorous testing in subsequent research efforts.

The second research question focuses on the relationships among the research constructs of interest, particularly with respect to explaining variation in the frequency and effectiveness of the budget-related behaviors. Generally, individuals low in Machiavellianism (lower scores) are expected to exhibit a straightforward, candid budgeting behavior; whereas high Machiavellians would engage in manipulative budgeting behavior. Similarly, individuals relatively high in accounting competence are expected to report consistently different attitudinal and behavioral patterns than those relatively less competent individuals. Again, specific, directional hypotheses

regarding the expected relationships among the constructs have not been stated due to the exploratory nature of this research.

Data Collection and Analysis

A sample of 55 US and 44 Spanish mid- to upper-level managers participated as research subjects by completing the questionnaire. All of the managers were educated through at least an undergraduate degree in business and were currently employed. Each subject had continuing budgetary responsibilities, at least one subordinate, and an immediate superior. The two groups seemed to provide a reasonable cross-section of business managers within each of the two societies: no two individuals belonged to any single organization and no particular segment of either of the two economies was disproportionately represented.

The questionnaires were completed and returned anonymously, and required approximately 10 minutes to complete. All of the scales consisted of 7-point Likert-format items. Ten items measured the frequency and effectiveness of budgeting behavior, five measured accounting competence, and 20 measured Machiavellianism. After reverse scoring and averaging, mean scores for the three dimensions of Machiavellianism, the five indicators of accounting competence, and the 20 budget-related behavior responses were produced and analyzed. Each of the mean scores are presented in Table 3 for Machiavellianism and competence and in Table 4 for the budget-related behavior items.

Table 4. Budget-related behaviors: Scores and tests for differences between groups

| No. | Behavior | Frequency | | | Effectiveness | | |
|-----|----------------------------------|-----------|---------|---------------------------|---------------|---------|---------------------------|
| | | US | Spanish | t-tests sig. levels | US | Spanish | t-tests sig. levels |
| 1. | Provides Supporting Data | 5.52 | 5.85 | 0.11 | 5.71 | 6.32 | 0.01 |
| 2. | Uses Formal Proposals | 4.41 | 4.93 | 0.04 | 4.89 | 5.24 | 0.15 |
| 3. | Portrays Hardship | 2.64 | 3.52 | 0.01 | 2.82 | 4.07 | 0.01 |
| 4. | Uses Projections | 4.80 | 5.67 | 0.01 | 5.09 | 6.36 | 0.01 |
| 5. | Combines Small Items | 3.98 | 4.83 | 0.01 | 4.41 | 5.33 | 0.01 |
| 6. | Encourages Observation | 4.30 | 4.70 | 0.24 | 4.93 | 5.35 | 0.13 |
| 7. | Stresses Cost Effectiveness | 4.96 | 5.62 | 0.01 | 5.16 | 5.33 | 0.52 |
| 8. | Uses Personal Relationships | 4.71 | 5.15 | 0.16 | 5.16 | 5.15 | 0.97 |
| 9. | Uses "Foot in the Door" Approach | 3.02 | 4.32 | 0.01 | 2.95 | 4.28 | 0.01 |
| 10. | Postures for Negotiation | 3.76 | 4.72 | 0.01 | 4.07 | 4.65 | 0.10 |

Differences Between the Groups

Our initial analysis considered comparisons of mean response rates between US and Spanish managers. There are complications in the use of multiple tests and significance levels that may influence interpretation of the data at this level. However, the individual comparisons should prove useful for subsequent research in the area of international studies. The perceived competence level was significantly different for only one question dealing with a desire for a stronger background in the technical aspects of budgeting. Since the question addressed the *desire* for a stronger background rather than the managers' existing level of competence, we must conclude that the competence levels between the US and Spanish managers were not significantly different. This lack of significant difference in the level of accounting competence between the two groups may aid in the interpretation of the budgeting behaviors. If the accounting competence of the two groups of managers is similar, differences in the frequency and effectiveness of certain budgeting behavior should be easier to interpret. Such differences would be attributable to factors other than differences in competence or education.

On the tactics questions the Spanish managers exhibited a higher level of Machiavellian tactics than the US managers. However, the difference was not significant. The Spanish managers also demonstrated a higher level of Machiavellian views, significantly different from the US managers at a 0.01 level. The US managers indicated a higher level of abstract morality and the difference was significant at the 0.01 level. The data indicate that the two groups differ on two of the three dimensions of Machiavellianism, suggesting differences in the societal views of the two countries (see Table 4).

As previously discussed, the managers were asked to respond to questions regarding the frequency and effectiveness of 10 budget-related behaviors. Interestingly, all significant differences between the US and Spanish managers (0.05 level) were of the same direction. The Spanish managers engaged in seven of the 10 behaviors more frequently than the US managers. Also, the Spanish managers perceived five of the 10 behaviors to be more effective than their US counterparts. The data suggest that Spanish managers use budget-related behaviors 3, 4, 5 and 9 more frequently than the US managers at least partly because of the perception that these behaviors are more effective. Spanish managers also perceived the use of facts and figures to support financial plans (item no. 1) to be more effective than did the US managers but the two groups did not differ as to the frequency of the behavior. Finally, the Spanish managers reported relatively more frequent use of behaviors 2, 7, and 10 in spite of the fact that they did not perceive these behaviors as more effective.

In summary, these preliminary findings suggest that the accounting competence held by the two groups of managers was not significantly different even though the Spanish managers perceived a greater need to increase their technical background, that the Spanish managers reported a higher level of Machiavellian views, that the US managers reported a higher level of abstract morality, and that the Spanish managers perceived a number of budget-related behaviors to be more effective and used more frequently. The Spanish managers reported more frequent use and more effective results of four budget-related behaviors: Portrays Hardship (3), Uses

Projections (4), Combines Small Items (5), and Uses “Foot in the Door” Approach (9).

Relationships among the Variables

Additional analysis of the data was necessary to examine the usefulness of the competence and Machiavellianism constructs in explaining variation in the budget-related behaviors. This subsequent analysis was limited to the four behaviors used more frequently and perceived to be more effective by the Spanish managers. Although there are many differences in the perceived frequency and effectiveness of budgetary behavior, only four of the constructs differed in both the use of and perceived effectiveness of behaviors for the US and Spanish managers. It is contended that both frequency and effectiveness are necessary traits for measuring budgetary behavior in managers. A manager who engages in budgetary behavior yet contends that the behavior is not effective is simply “game playing” and is not actively pursuing a certain behavior for budgetary results.

For each of the four behaviors, multiple regression was performed using multiplicative behavior scores (frequency \times effectiveness) as the dependent variable and with a 0/1 indicator of nationality as an independent variable, where “1” indicates a Spanish manager. Tests were performed to see if the competence or Machiavellianism constructs were useful in explaining variation in the scores given the explanatory power of nationality. The results of these tests are reported in Table 5.

The regression coefficients for nationality, Machiavellian views, and abstract morality indicate significant relationships with the frequency/effectiveness score of “Portrays Hardship”. Individuals high in these Machiavellian tendencies would be more likely to present their department as experiencing financial hardship to obtain budget items. Nationality and accounting competence were significantly related to “Uses Projections”. The positive relationship between accounting competence and supporting budgetary requests with convincing projections is consistent with expected behavior. Nationality and Machiavellian views are significantly related to “Combines Small Items”. A manager high in Machiavellian views would perceive human nature negatively. These individuals would tend to mask questionable budget items with items that are more likely to be approved. Nationality and Machiavellian views are also related to the final frequency/effectiveness score, “Uses ‘Foot in the Door’

Table 5. Budget-related behaviors: results of regression analysis (*F*-values)

| Dependent Variables | Independent variables | | | | |
|---------------------------|-----------------------|-------|---------|--------|----------|
| | Nat. | Comp. | Tactics | Views | Morality |
| Portrays Hardship (#3) | 3.97* | 0.01 | 0.29 | 3.59** | 3.73** |
| Uses Projections (#4) | 20.07* | 9.99* | 0.03 | 1.69 | 0.28 |
| Combines Small Items (#5) | 7.05* | 1.59 | 0.10 | 5.35* | 0.59 |
| “Foot in the Door” (#9) | 6.67* | 0.10 | 0.29 | 4.90* | 0.82 |

* significant at 0.05 level; ** significant at 0.10 level.

Approach". Managers with high Machiavellian views would seek initial approval in small amounts and increase the amount once the request is in the budget.

Implications

Both the differences between the groups studied and the relationships among the research variables of interest have numerous implications for the designers and users of information systems of multinational organizations if the samples are representative of the populations of US and Spanish managers (see following discussion of limitations). The differences between the two groups suggest that the competence levels of US managers are not significantly different from those of the Spanish managers except that the Spanish managers desire a stronger background in the technical aspects of budgeting. This finding could be attributable to differences in training or education (US managers have been more fully trained) or attributable to differences in the level of technical competence perceived to be important (Spanish managers desire to be more competent). Either explanation leads to the conclusion that Spanish managers desire more education regarding the technical aspects of budgeting. US managers may need to be convinced that a stronger technical background in budgeting is beneficial.

As previously mentioned, differences in the societal view of the two countries are suggested by the differences in the levels of Machiavellian views and abstract morality. US managers seem to have higher levels of abstract morality and lower levels of Machiavellian views. The groups did not differ with respect to Machiavellian tactics. Thus, although Spanish managers might view the world as a "Machiavellian" place and might have a lower level of abstract morality, there is no suggestion that they perceive themselves any more likely to *behave* in a Machiavellian manner. These findings might be attributable to the fact that an individual might be less likely to perceive themselves as acting certain way when the environment in which they function is biased in the same direction. That is, Spanish managers might not perceive themselves to be Machiavellian oriented because they perceive others in their environment to be so. Spanish managers might have higher levels of Machiavellian views and lower levels of abstract morality because of how they have been treated by others in their society. Regardless of the reasons for these differences, the designers and users of information systems should recognize that Spanish managers are more likely to view others as manipulative and to view information systems as mechanisms for manipulation.

Differences in the budget-related behaviors of the two groups of managers are not inconsistent with the differences in the competence and Machiavellianism constructs. The Spanish managers reported more frequent use and more effective results for four budget-related behaviors: Portrays Hardship, Uses Projections, Combines Small Items, and Uses "Foot in the Door" Approach. It seems logical to expect Spanish managers (who were higher in Machiavellian views) to portray hardship, combine small items, and use a "foot in the door" approach in their budgets since these could all be viewed as manipulative behaviors or as behaviors intended to

protect the manager from expected manipulative or punitive behaviors of superiors. Finally, the use of convincing projections was more frequently used and perceived to be more effective by the group that exhibited a need for greater technical competence – Spanish managers. These relationships were largely supported by the results of the regression analysis performed in studying the relationships among the research constructs of interest.

The differences in the budget-related behaviors between the two groups have implications for the users and designers of information systems that are similar to the implications of the differences in the accounting competence and Machiavellianism measures. The Spanish managers reported use and perceived effectiveness of the manipulative behaviors (Portrays Hardship, Combines Small Items, and Uses “Foot in the Door”) suggest the need for a more effectively controlled budgeting system and/or an improved environment stressing a positive, open approach to budgeting and the use of the budget as a managerial tool. Again, educational efforts might be beneficial. The Spanish managers’ more frequent use and greater perceived effectiveness of Uses Projections as a budgetary behavior does not seem to be manipulative. The tendency of Spanish managers to use projections more than US managers should be recognized as a difference in designing and using budgeting systems, but whether Spanish managers should use fewer projections or US managers should use more projections is not clear.

Limitations

In addition to the limitations of all questionnaire-based research, the samples used in the current study may limit the generalizability of the findings. Also, more rigorous studies of the relationships among the attitude constructs of interest and the budget-related behaviors are needed.

The constructs of Machiavellianism were taken from the literature; and while a number of studies reported the same dimensions reported in this study, other research has grouped the questions differently and would obviously result in different relationships. The frequency and effectiveness of behavior should be considered as relative measures. The multiplicative surrogate used as a measure of engaging in a certain behavior and believing that the behavior is effective is subject to debate.

Suggestions for Future Research

Additional research should be conducted on the societal, personal, and organizational influences on budgetary behavior. In the business community, the impact of societal values on the business and education community are interesting topics. Personal constructs have received more attention in a national sense. These constructs must now be measured relative to the international impact. Finally, yet not exclusively, the organizational environment should be investigated for international differences.

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Explaining the International Supply of Auditors

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Key words: International accounting; International auditing; Supply of auditors

Abstract: The proportion of auditors in a country's population varies considerably from country to country. Economic and cultural variables are used to explain the supply of auditors in 62 different countries. Countries that have a higher percentage of workers in the financial sector and former British colonies tend to have a higher proportion of auditors. Countries that are poorer and predominantly Moslem tend to have a lower proportion of auditors.

Auditing is a worldwide profession. Auditors are asked to perform audits on a wide variety of organizations in almost every country in this world. The proportion of auditors, however, varies considerably from country to country. The purpose of this paper is to explain why the supply of auditors varies among countries. Economic and cultural variables are used in a regression model to explain the proportion of auditors in different countries.

The nature of a country's economy should partially explain the supply of auditors. Agrarian economies with small landholdings are less likely to use auditors because there would be fewer absentee owners who would request audits. Economies with a high proportion of manufacturing activity, a large financial sector, and a stock exchange, however, would presumably require more auditors. Poorer countries may also have fewer auditors because of a lack at training facilities for auditors. The ability of the wealth at a country to explain the supply of auditors is likely also to be related to other economic variables such as the complexity of the relationship between managers and absentee owners or the nature of tax laws.

The culture of a country can also influence the supply of auditors. Auditors exist in part to resolve conflicts among different sectors of the economy. Some cultures may have a tradition of resolving these conflicts by different means and would not require as many auditors.

Using a linear regression model with the proportion of auditors as the dependent variable, the author found that countries with a higher percentage of workers in the financial sector and former British colonies tend to have a higher proportion of

auditors. Countries that are poorer and predominantly Moslem tend to have a lower proportion of auditors. Depending on the configuration of independent variables and the data set, between 54 percent and 78 percent of the variance in auditor supply across countries can be explained.

Factors Affecting the Supply of Auditors

Economic Factors

The demand for auditors has been studied within a principal/agent framework by Chow (1982), Antle (1982), and Baimon et al. (1987). These studies focus on the conflicts among managers, shareholders, and bondholders due to information asymmetry. Auditors are hired to reduce this information asymmetry, but there have been no empirical tests of these theories.

Pratt and Behr (1987) have extended this analysis to the international level by suggesting factors that tend to increase external reporting systems. They claim that more money is spent on external reporting systems as the capital market of a country becomes larger and more complex, participants become more dispersed and opportunistic, and there are more suppliers of capital relative to the number of managers. Auditors are part of an external reporting system.

These economic factors as well as cultural factors are considered in the model. The problem is obtaining data that can be used to represent the various factors. The following discussion describes the factors that should affect the supply of auditors and the surrogates that were chosen given data collection problems.

A primary factor that should affect the proportion of auditors within a particular country is the existence of absentee owners of capital. The role of auditors can be viewed as an information source to reduce conflicts between managers and absentee owners (shareholders and debt-holders). Countries with predominantly small owner-operated businesses would require fewer auditors to perform this task. Farms are commonly owner-operated in capitalistic countries, so countries with a large agrarian population would require fewer auditors. On the other hand, countries more involved in heavy manufacturing should require more auditors since capital is likely to be provided by absentee owners.

To represent the proportion of auditors due to absentee owners, the author used several surrogates for the intensiveness of manager-operated businesses. These surrogates include percentage of population employed in financing, insurance, real estate, and business services, percentage of gross domestic products (GDP) in manufacturing, the existence of stock market, and the percentage of GDP in agriculture. The first three surrogates should be positively related to the proportion of auditors and the last surrogate should be negatively related to the proportion of auditors.

Institutional factors should also affect the proportion of auditors. Only two countries from the sample in this paper did not require some form of auditing of financial reports of corporations.¹ Since a required corporate audit is so common in the present author's sample of countries, it is not included as an explanatory variable. The existence of corporate taxes is also an institutional factor that should lead to more

auditors. Corporate taxes were also prevalent in the present author's sample so it was also not included as an explanatory variable.

Public ownership of industry affects the proportion of independent auditors. Enthoven (1973, p. 309) noted that the demand for auditing private companies declined with the nationalization of many industries in Egypt in 1964. Independent auditors were replaced by a government-operated auditing group. The effect of government investment in manufacturing is also investigated in this paper. Communist countries (before 1990), whose economies tend to be predominantly centrally planned and controlled, are not included in the sample. The recent movement of Eastern Europe and the former Soviet Union to capitalism should create an increased demand for auditors.

The proportion of auditors can be constrained by educational requirements. University degrees and the passing of an examination are required in most countries. Some countries also have experience requirements. These constraints impose a cost on becoming an auditor and should lower the proportion of auditors. All of the countries in the sample had some constraints on becoming an auditor, so surrogates for this factor are not used in the empirical tests.

The proportion of auditors may also be constrained by a lack of resources. Poor countries may not have the educational facilities to train auditors. The GDP per capita is used as a measure of wealth of a country. Countries that have a lower GDP per capita are hypothesized to have a lower proportion of auditors if lack of resources is a constraint on training auditors. The GDP per capita may also represent other omitted economic variables. The complexity of an economy and the complexity of tax laws, which would create a demand for more auditors, are not explicitly included in the model and would probably be correlated to the GDP per capita.

There are some further economic factors that should affect the existing supply of auditors that are not included in the empirical model because of data availability. Multinational corporations have an important role in the world economy. They tend to have subsidiaries in many countries. The auditing of these subsidiaries may be performed by the parent's auditors or by local auditors. The degree that local auditors are used to audit subsidiaries at multinational corporations should affect the demand for auditors within the country.

Pratt and Behr (1987) suggest the use of factors related to the dispersion and opportunistic characteristics at the population. They also discuss the ratio of managers to capital suppliers. Data availability prevents the use of those variables in this paper. Also, there is nothing in the empirical model to represent the extensiveness of the work performed by the auditor or the quality of the auditing work. In some countries auditors perform tax audits as well as extensive financial reporting audits. In other countries only a more superficial audit is required.

Cultural Factors

The culture of a country should also affect the proportion of auditors. In some cultures auditing is an accepted method of helping resolve conflicts between managers and owners. In other cultures other methods of resolving conflicts may be preferred. Appropriate surrogates for representing preferred methods of conflict resolution are

difficult to obtain. In this paper, geographical and religious groups are used to represent general cultural differences. No directional relationship with the proportion of auditors is hypothesized.

Cultural factors are also represented by whether or not the country was a British colony.² Briston (1978) has demonstrated that developing countries tend to follow the accounting systems of their former colonists. The auditing profession has a long history in the United Kingdom and the use of auditors may have carried over to former British colonies. Therefore, countries that have evolved from the British system are hypothesized to have a higher proportion of auditors.

Data

The number of independent auditors in various countries was obtained from several sources. The International Federation of Accountants (IFAC) publishes a list of countries with member organizations and the respective memberships of many of those organizations. Some member organizations of the IFAC are for management accountants, however, and those organizations were eliminated in determining the supply of auditors. The IFAC publication also gives a breakdown of the membership by describing whether individual members are working in industry, government, or public practice. In this study the author used both the total membership and the membership in public practice as dependent variables, but only membership in public practice is reported because of the similarity of results. IFAC membership data were obtained for 49 countries.

In addition to obtaining data from IFAC, the author wrote each of the accounting professional organizations with IFAC data as well as accounting professional organizations in 29 other countries. Branches of US accounting firms in eight additional countries without professional organizations were also contacted. These letters asked for the number of people in the country qualified to audit an independent company. Sixty-two usable responses were received from this procedure. In certain countries there is no census data on accountants, especially where there is no professional organization. This survey was conducted in 1988. The tests in this paper used both these survey data and IFAC data. The proportion of auditors in the population for the survey sample are reported in Table 1. The proportion of auditors ranges from 0.007 in Bermuda to 0.000005 in Bangladesh. The proportion of auditors in Bermuda is 1400 times the proportion of auditors in Bangladesh.

The sampling procedure in this paper is obviously not a random sampling of all countries. The sample is compared with other non-communist countries with a population greater than one million. Table 2 reveals that I obtained data for approximately 50% of the non-communist countries. My sample is composed of much wealthier countries with a higher percentage of former British colonies and lower percentage of former French and Spanish colonies. Europe is well represented in my sample and Africa and South America are under-represented. Moslem countries are also under-represented. Therefore, the sample is not representative of all non-communist countries and there are limits on extending the results from my sample to other countries.

Table 1. Sample countries ranked by proportion of auditors in the population

| Country | Proportion of auditors | Country | Proportion of auditors |
|-----------------|------------------------|-----------------|------------------------|
| Bermuda | 0.007000 | Zimbabwe | 0.000119 |
| New Zealand | 0.004366 | Spain | 0.000110 |
| Singapore | 0.002011 | Lesotho | 0.000100 |
| Canada | 0.001799 | Swaziland | 0.000100 |
| United Kingdom | 0.001694 | West Germany | 0.000096 |
| Argentina | 0.001613 | Malaysia | 0.000094 |
| Phillipines | 0.001404 | Egypt | 0.000086 |
| United States | 0.001046 | Jordan | 0.000085 |
| Australia | 0.001003 | Japan | 0.000079 |
| Israel | 0.000962 | Botswana | 0.000077 |
| Iceland | 0.000712 | Western Samoa | 0.000075 |
| Malta | 0.000706 | Finland | 0.000074 |
| Hong Kong | 0.000695 | Belgium | 0.000069 |
| Luxembourg | 0.000630 | India | 0.000066 |
| Cyprus | 0.000545 | Solomon Islands | 0.000055 |
| Denmark | 0.000480 | Kenya | 0.000053 |
| Netherlands | 0.000450 | South Korea | 0.000048 |
| Norway | 0.000449 | Portugal | 0.000047 |
| Austria | 0.000404 | Zambia | 0.000046 |
| Italy | 0.000386 | Nigeria | 0.000045 |
| Costa Rica | 0.000380 | Greece | 0.000041 |
| South Africa | 0.000358 | Liberia | 0.000032 |
| Trinidad/Tobago | 0.000342 | Malawi | 0.000026 |
| Brazil | 0.000333 | Uruguay | 0.000024 |
| France | 0.000299 | Indonesia | 0.000020 |
| Fiji Islands | 0.000288 | Colombia | 0.000017 |
| Barbados | 0.000256 | Tunisia | 0.000014 |
| Sri Lanka | 0.000250 | Pakistan | 0.000013 |
| Switzerland | 0.000246 | Tanzania | 0.000012 |
| Sweden | 0.000193 | Morocco | 0.000005 |
| Mexico | 0.000128 | Bangladesh | 0.000005 |

Table 2. Comparison of sample countries with non-sample, non-communist countries with population greater than a million

| | Sample | Other countries |
|--------------------------|--------|-----------------|
| Number | 62 | 56 |
| GDP/population (mean) | \$4693 | \$1791 |
| British colonial history | 45% | 14% |
| French colonial history | 10% | 30% |
| Spanish colonial history | 5% | 21% |
| Stock exchange | 73% | 14% |
| European | 26% | 2% |
| Asian | 21% | 25% |
| African | 23% | 46% |
| North American | 6% | 9% |
| South American | 6% | 11% |
| Oceania | 18% | 7% |
| Moslem | 13% | 41% |

The sample also suffers from potential measurement error. The intention of the paper was to obtain data on the number of auditors that are qualified to audit an independent company. Other types of accountants may be included in the numbers

from some countries and not included in other countries. Also, some countries have different levels of auditors with only the most qualified auditors allowed to audit the largest corporations. The quality of the auditors may also vary across countries. In some countries there are very few requirements to qualify as an auditor while in other countries there are stringent requirements.

The *Year Book of Labor Statistics* – 1988 published by the International Labour Office in Geneva was used to obtain the number of workers in the financial sector (financing, insurance, real estate, and business services). These data were available for only 51 of the sample countries. The *National Accounts Statistics: Analysis of Main Aggregates* – 1985 published by the United Nations in 1988 was used for the percentage of GDP in agriculture and manufacturing and the GDP per capita. Most of these data were from the year 1985 while the proportion of auditors for a particular country was obtained during the years 1985–1988. Data was not found on every variable for every country in the sample, this is reflected in the sample size of the various tests.

Tests and Results

The tests use the log of the proportion of auditors in a population as the dependent variable. The log transformation was made to create residuals that are closer to normality. The correlation matrix for the log of the proportion of auditors in a population and the independent variables (whether the country was a British colony, log of GDP per capita, percentage of agriculture in the GDP, percentage of manufacturing in the GDP, proportion of population in the finance sector, existence of a stock exchange, and whether a country is more than 50% Moslem) are reported in Table 3.³ Multicollinearity among the independent variables is apparent and due, in part, to several variables being surrogates for management-oriented economies. The percentage of manufacturing in the GDP, the existence of a stock market, the percentage of agriculture in the GDP, and the proportion of the population in the finance sector are not used together in the regression analysis because they are all intended to represent the influence of management-oriented economies on the supply

Table 3. Pearson correlation matrix of dependent and independent variables

| | LAUD/POP | BRITISH | LGDP/POP | %AGRIC | %MFG | FIN, ETC./POP | STOCK EXCHANGE |
|----------------|----------|---------|----------|--------|--------|---------------|----------------|
| LAUD/POP | 1.000 | | | | | | |
| BRITISH | 0.090 | 1.000 | | | | | |
| LGDP/POP | 0.647 | -0.330 | 1.000 | | | | |
| %AGRIC | -0.529 | 0.283 | -0.777 | 1.000 | | | |
| %MFG | 0.277 | -0.385 | 0.514 | -0.405 | 1.000 | | |
| FIN, ETC./POP | 0.716 | -0.096 | 0.863 | -0.647 | 0.364 | 1.000 | |
| STOCK EXCHANGE | 0.206 | -0.366 | 0.398 | -0.325 | 0.506 | 0.418 | 1.000 |
| MOSLEM | -0.473 | -0.072 | -0.323 | -0.284 | -0.271 | -0.346 | 0.021 |

LAUD/POP = log of proportion of auditors in the population; BRITISH = 1 if British colony, 0 otherwise; LGDP/POP = log of GDP per capita; %AGRIC = percentage of GDP from agriculture; %MFG = percentage of GDP from manufacturing; FIN, ETC./POP = proportion of population working in finance, insurance, real estate, and business services; STOCK EXCHANGE = 1 if stock exchange in country, 0 otherwise; MOSLEM = 1 if country is more than 50% Moslem, 0 otherwise.

of auditors. Only the regression results using the proportion of the population in the finance sector and the percentage at agriculture in the GDP are reported in this paper. The other variables representing a management-oriented economy were not significant.

The regression results using the survey data to determine the proportion of auditors are reported in Table 4. When geographical locations are included, island nations have a significantly higher proportion of auditors than Europe (the default continent). Moslem countries have fewer auditors, and those countries with a high proportion of people working in the finance sector have more auditors. Former British colonies and the GDP per capita have no significant explanatory power when geographical locations are included. Eliminating geographical locations, however, causes former British colonies to have a significantly higher proportion of auditors. Using the percentage of agriculture in the GDP in place of the proportion of people working in the finance sector causes the coefficient on the GDP to be significant. This result could simply mean that the percentage of agriculture in the GDP measures the management-orientation construct with error, and the GDP per capital is correlated with the measurement error.

In Table 5, the regression results explain the IFAC data on auditors involved in public practice. Although the sample is smaller, it may more accurately measure the number at practicing auditors. These results suggest that the GDP per capita is a significant explanatory variable no matter which variable is used as a surrogate for a

Table 4. Explaining the log proportions of auditors using the survey sample

| Explanatory variables | Coefficients (<i>t</i> -statistics) | | |
|--------------------------------|--------------------------------------|------------------|-------------------|
| Constant | -5.26 (-6.26) | -5.24 (-7.39) | -6.19 (-9.34) |
| FIN, ETC. /POP | 15.78 (2.11)* | 16.78 (2.11)* | |
| %AG | | | -0.01 (-0.058) |
| BRITISH | 0.12 (0.82) | 0.31 (2.17)* | 0.42 (3.15)* |
| LGDP/POP | 0.29 (1.17) | 0.32 (1.36) | 0.70 (4.15)* |
| NA/SA | 0.48 (2.00) | | |
| AFRICA | 0.08 (0.30) | | |
| ASIA | 0.39 (1.88) | | |
| ISLAND | 0.54 (2.74)* | | |
| MOSLEM | -0.42 (-2.04)* | -0.31 (1.50) | -0.49 (-2.49)* |
| Sample size | 51 | 51 | 61 |
| Adjusted <i>R</i> ² | 62.2% | 54.9% | 54.1% |

FIN, ETC. /POP = proportion of population working in finance, insurance, real estate, and business services; %AG = percentage of GDP from agriculture; British = 1 if former British colony, 0 otherwise; LGDP/POP = log of GDP per capita; NA/SA = 1 if country in North America or South America, 0 otherwise; Africa = 1 if country in Africa, 0 otherwise; Asia = 1 if country is Asian, 0 otherwise; ISLAND = 1 if country part Oceania, 0 otherwise; MOSLEM = 1 if country more than 50% Moslem, 0 otherwise.

* Significant at the 0.05 level.

management-oriented economy. The Moslem and British variables are also significant in all the trials. The geographical areas and the proportion of people in the finance sector are not significant, but the percentage of agriculture in the GDP is significant. The adjusted R^2 in each equation is higher in Table 5 than Table 4, suggesting less measurement error in the IFAC data.

Conclusion

Although there are many theoretical papers identifying causes for the demand for auditors, we know little of the supply of auditors and factors associated with the supply of auditors. This paper is an initial attempt to explain the supply of auditors in an international setting.

Based on prior theoretical papers a number of variables are chosen to represent economic factors that should influence the supply of auditors in different countries. In addition, cultural factors, such as religion and former colonial status, are used to explain the supply of auditors.

Economic factors representing the management orientation of the economy were significant in some tests, indicating the accuracy of theories suggesting that the demand for auditors derives from the need for conflict resolution between managers and absentee owners. These management-oriented variables are highly correlated with the GDP per capita, and their lack of consistent significance is probably due to the inclusion of GDP per capita in all the tests.

Table 5. Explaining the log of the proportion of auditors using IFAC numbers in public practice

| Explanatory variables | Coefficients (t-statistics) | | |
|-----------------------|-----------------------------|-------------------|-------------------|
| Constant | -7.31 (-8.66)* | -7.66 (-10.5)* | -6.20 (-9.37)* |
| FIN, ETC./POP | 1.75 (0.18) | -4.07 (-0.43) | |
| %AG | | | -0.02 (-2.32)* |
| BRITISH | 0.55 (3.82)* | 0.65 (4.80)* | 0.56 (4.54)* |
| LGDP/POP | 0.85 (3.12)* | 0.99 (3.95)* | 0.61 (3.68)* |
| NA/SA | -0.27 (1.14) | | |
| AFRICA | 0.06 (0.24) | | |
| ASIA | 0.10 (0.55) | | |
| ISLAND | 0.39 (1.88) | | |
| MOSLEM | -0.69 (-3.50)* | -0.67 (-3.66)* | -0.70 (-3.78)* |
| Sample size | 41 | 41 | 49 |
| Adjusted R^2 | 77.7% | 76.0% | 76.8% |

Abbreviations as Table 4.

*Significant at the 0.05 level.

The GDP per capita is especially significant in the tests explaining the proportion of auditors using the IFAC data. One possible explanation for the significance of this variable is that poorer countries can not afford to train auditors. The GDP per capita could also be correlated with omitted economic variables for which feasible surrogates could not be found.

Former British colonies tend to have more auditors. Modern-day auditing began in the United Kingdom, and the use of auditors has transferred to its former colonies. Moslem countries, on the other hand, have fewer auditors. The fundamental Moslem religion discourages the lending of money for interest. This constraint on financial intermediation would reduce the demand for auditors by creditors. There may also be other aspects of a Moslem country that either discourage a manager-oriented economy or promote non-auditor methods of resolving conflict between managers and absentee owners. Given the wide variety of cultures that embrace the Moslem religion, generalization is difficult.

The supply of auditors in a country should be related to the demand for auditors. In this paper the author has examined different factors that could influence the demand for auditors and used those factors to explain the proportion of auditors in different countries. Constraints on becoming an auditor, such as education requirements, examinations, and experience requirement, would lower the supply of auditors. Presently we have very little information on the influence of such constraints.

Notes

1. I used Price Waterhouse's series on "Doing Business in ..." to determine audit requirements. Of the 62 countries in my sample, only two countries – Uruguay and Zambia – explicitly stated that an audit was not required. The information on these two countries, however, was dated 1981 and 1969, respectively. No information on audit requirements was available for 16 countries in my sample.
2. Not enough members of other colonial systems are in the sample to be specifically tested for their effect.
3. Logarithms were used to transform variables into approximately normal distributions. The proportion of businesses owned by the government was only found for 13 countries. Correlations with the dependent variable on this subset were insignificant and this variable is not used in subsequent tests.

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A Comparative Study of Auditors' Attitudes to Uncertainty Qualifications: An Empirical Test of the Strong Versus Weak Uncertainty Avoidance Hypothesis

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Key words: Culture; Subject to; Uncertainty avoidance

Abstract: *This study empirically examines the effects of the cultural dimension, uncertainty avoidance (UA), on Hong Kong (Chinese) and Australian (Caucasian) auditors' perception of the uncertainty "subject to" audit qualification. A t test is used to evaluate the proposition that, in line with the UA hypothesis, Hong Kong auditors will demonstrate a higher preference for the "subject to" qualification than Australian auditors when given information regarding uncertainty in the financial statements. The results showed that Hong Kong auditors have a higher preference to issue a "subject to" qualification than Australian auditors. This can be explained by the UA hypothesis which posits that auditors in weak UA society (i.e., Hong Kong) who feel more secure and less threatened by the risk of losing clients have a higher preference for the "subject to" qualification than auditors in strong UA society (i.e., Australia).*

The increasing globalization of trade, internationalization of auditing firms, and attempts at greater harmonization of accounting have led to calls for more research into the international dimensions of auditing. Needles (1989), for example, recently admonished accounting researchers for having neglected international auditing research. In particular, he made the following observation regarding the modest international auditing research that exists (p. 7):

Most of the research in international auditing has been descriptive, with rare attempts to develop general frameworks and theory. The few empirical studies that have been conducted are descriptive surveys or studies limited to a single country which do not provide insights into the solutions to the problems of international auditing.

There are two significant points in the above statement. The first relates to the need for frameworks and theories that can explain auditing practices across national boundaries. The second concerns the need to conduct studies across different countries.

What is clear, therefore, is a need for studies that draw on some theoretical frameworks and use these theoretical frameworks to evaluate empirically auditing practices across countries. Such a theoretical framework may be obtained from social cultural theories and applied to the study of international accounting (Arpan and Radebaugh, 1984; Violet, 1983). Farmer and Richman (1966), for example, in their conceptual framework for international business identified socio-cultural factors as an important environmental characteristic that could affect business practices. Arpan and Radebaugh (1984) make the following point in the context of what they call "cultural relativism" (p. 15) :

... environmental analysis can be a valuable tool in explaining and understanding differences in the way in which businesses operate in different countries and, more specifically, and appropriately here, in which accounting principles and practices differ ... the rationality of any behaviour should be judged in terms of its own cultural context ...

Based on these identified needs, this study examines whether cultural factors can explain differences in auditors' attitudes towards the interpretation and implementation of certain auditing standards. It examines the effects of the cultural dimension, uncertainty avoidance (UA), (Hofstede, 1980) on Hong Kong (Chinese) and Australian (Caucasian) auditors' perceptions of uncertainty information contained in financial statements relating to pending litigation and their decisions regarding the "subject to" qualification. More specifically, these decisions relate to preferences for the "subject to" audit qualification given the information on uncertainty in the financial statements.

Culture

Culture may be defined as the expression of norms, values, and customs which reflect typical behavioral characters (Takatera and Yamamoto, 1987). Hofstede (1980) provides another definition of culture as:

... the collective programming of the mind which distinguishes the members of one human group from another ... the interactive aggregate of common characteristics that influence a human group's response to its environment.

Culture is also commonly referred to as the frameworks of meanings, social understandings, beliefs, and values. It is considered to be a powerful environmental factor that could affect the accounting system of a country and, in particular, how individuals perceive and use accounting information. Frank's (1979) study on accounting principles and reporting practices in 38 countries found support for the hypothesis that a country's cultural environment influences its accounting practice. This is based on the broad notion that accounting is an interactive socio-technical activity involving both human and non-human resources or techniques. As a result of this interaction, accounting cannot be culture free (Violet, 1983).

Hofstede (1980) provided some interesting insights into the influence of culture on managerial attitudes and behavior. He suggested four distinct dimensions of culture based on his empirical work in 40 countries in his first study and 60 countries in his second study; strong versus weak UA, individualism versus collectivism,

large versus small power distance, and masculinity versus femininity. According to Hofstede (1980), society is seen as either weak UA or strong UA on the basis of scores and ranking (high ranking denotes strong UA and vice versa). In practice, however, this is really a continuum. In the weak UA situation, members of that society are relatively more secure, while in the strong UA situation members are less secure and there is a higher level of anxiety. These differences would manifest themselves in how auditors from different societies make audit decisions.

Perera (1989), in a review of the relevance of these dimensions in international accounting, noted that it is essential that the researcher selects the most pertinent cultural dimension to explain the particular facet of behavior being studied. In this study, the cultural dimension of UA is selected since it measures the extent to which members of society react to uncertainty and ambiguity, which is very much a part of the business world. In particular, there are many situations where auditors have to make judgments in the face of uncertainties in the financial statements of their clients.

The implication of this theory is that even if accounting standards are uniform across countries, the use of accounting information and the practice of accounting may be different. Such an implication has a bearing on ideas and current attempts at harmonization of accounting and auditing standards since uniformity of these standards may not necessarily ensure harmonization of practice because of cultural and environmental differences. As Agacer and Doupnik (1991) suggested:

Culture is often cited as the most serious barrier obstructing the harmonization process.

Thus, differences in culture could give rise to problems of achieving harmonization and uniformity in practice. Agacer and Doupnik (1991) provided some evidence to show that perceptions of auditor independence differed significantly across three national boundaries even though the auditing standard requiring auditor independence is the same. As mentioned earlier, in auditing practice, there are numerous accounting situations whereby accountants are required to make judgments. These judgments could be affected or influenced by the cultural environment which could, in turn, affect decisions on materiality.

Development of Proposition

In the auditing context, there are several situations where the auditor must make decisions in an uncertain environment. One such area, which is the focus of this study, is the decision to issue a "subject to" qualification when material uncertainties exist¹ (Gul, 1987). According to auditing standards both in Australia and in Hong Kong, when the uncertainty is material but not fundamental, the auditor should issue a "subject to" qualification. The decision is obviously dependent on the auditors' perceptions of the materiality of the uncertainty (Bertholdt, 1979). Such perception is likely to be influenced by cultural differences. Based on Hofstede's (1980) theory, auditors who are in different UA societies are expected to react differently to the uncertainty and this, in turn, will affect their decisions to issue a "subject to" qualification. The uncertainty that is selected for this study is the situation of contingent liability relating to pending litigation.

A major issue that is related to the decision of the auditor to issue a "subject to" qualification is the risk that clients who receive an audit qualification would likely switch auditors. This switching behavior was identified in studies in Australia (Craswell, 1988) and in Hong Kong (Gul, et al., 1992). Both these studies indicated that there was a relationship between audit qualifications and switching behavior. In other words, clients were more likely to switch auditors when they received a qualified report. This causes some anxiety among auditors when issuing a qualification since there is a possibility of losing the client.² This paper argues that in low UA societies (with low level of anxiety) auditors are expected to be relatively less affected by the risk of losing clients. On the other hand, in high UA society, there is greater concern for the risk of losing a client. Since Hong Kong, according to Hofstede (1980), is relatively low in UA on the continuum as compared to Australia, it seems reasonable to expect that Hong Kong auditors are more likely to issue a "subject to" since there is a lower level of anxiety regarding the client switching auditors. In addition, there is evidence to suggest that Hong Kong has a lower competitive audit market environment than Australia. The buoyancy and growth of the Hong Kong economy over the last 20 years or so have meant that there is much room for audit firm activity and expansion, whereas the recession in Australia, particularly in the last 3 years, has resulted in several audit firms cutting back on staff and competing in a declining audit market. Thus, auditors' "anxiety" of losing a client as a result of an audit qualification may be higher in Australia than in Hong Kong.

Based on the above reasoning, we explored the following proposition:

Proposition: Hong Kong auditors will demonstrate a higher preference for the "subject to" qualification than Australian auditors.

Method

To test for the effects of uncertainty information on auditors' attitudes to the "subject to" qualification using the UA hypothesis, two groups of subjects were selected: one group from Hong Kong and the other from Australia. The 18 local Hong Kong (Chinese) auditors classified by Hofstede (1980) as weak uncertainty avoiders came from two Big Six and one medium-sized local certified public accountant (CPA) firms. The Australian sample of 17 auditors came from six auditing firms in Brisbane, Australia. All the auditors had experience in making audit opinion judgments. The mean age and experience³ for the two groups of subjects are given in Table 1. Each of the two groups of auditors was given identical financial statements and information for a hypothetical company. A set of summarized financial information with the relevant footnote disclosure of the contingent liability is shown in Appendix A. The footnote disclosure regarding the litigation read as follows:

Table 1. Mean age and experience

| | Hong Kong | Australia |
|-----------------|-----------|-----------|
| Mean age | 36 | 35 |
| Range | 27-45 | 21-33 |
| Mean experience | 14 | 13.5 |

The company is defendant in a lawsuit alleging infringements of certain patent rights and claiming royalties and punitive damages amounting to \$500 000. The company has filed an answer denying liability and plans to defend the claim. The ultimate outcome of the lawsuits cannot presently be determined and no provision for liability that may result has been made in the financial statements.

On the basis of the information given in Appendix A, subjects were requested to state the likelihood, on a Likert-type scale from 1 to 7 (1 indicating little likelihood and 7 great likelihood), that they would issue a "subject to" qualification given a significant level of uncertainty in the form of pending litigation against the company.

Results and Discussion

The results using a *t* test⁴ as reported in Table 2 show that there is a significant difference in the preference for the "subject to" qualification between the two groups of auditors: Hong Kong and Australia. The Hong Kong (Chinese) auditors reported a higher preference to issue a "subject to" qualification than the Australian (Caucasian) auditors given a significant level of uncertainty in the form of a pending litigation against the company concerned.

The significant differences between the two groups of subjects in the preference for the "subject to" qualification under conditions of some uncertainty may be explained by the cultural differences using the UA hypothesis. The results are consistent with the UA hypothesis which posits that individuals in weak UA society may be relatively more secure than those in strong UA society. Therefore auditors in Hong Kong, which is relatively low in the UA ranking, as compared to Australian auditors, were less affected by the risk of losing clients, thereby demonstrating a higher preference for the "subject to" qualification under uncertainty conditions. The above preference is made when the two groups of auditors consider identical financial information in making their preference decisions.

This study adds to the existing limited empirical studies conducted in international auditing. It sheds some light on auditors' attitudes to uncertainty qualifications in an international context by empirically evaluating the relevance of cultural differences. The study, despite its limited focus, confirms the fact that accounting is not culture free. It points to culture as a significant variable in explaining differences in accounting and auditing practices across national boundaries. This idea is not new and has, for example, been recognized by Sy (1981):

Accounting principles, standards and practices are usually the direct product of the circumstances and influences of their environment and are most meaningful if viewed against such factors. Accordingly, accounting methods and applications originating in one country have probably the greatest utility in that

Table 2. Results of *t* tests

| | Hong Kong | Australia |
|--------------------|-----------|-----------|
| Number of subjects | 18 | 17 |
| Mean score | 4.89 | 3.29 |
| Standard deviation | 1.88 | 1.65 |

⁴ $t=2.67$ ($p<0.01$, one-tailed).

country or one with similar environment. They could be quite inappropriate or may work undue hardship in countries of dissimilar environments.

In the development of international accounting standards, it is therefore essential that the diverse and different environments where some standards are intended to be applied are first understood and appreciated. Failure to consider environmental differences or circumstances will likely deter the acceptance of any established international standards.

This means that even if harmonization of auditing standards was achieved, there may be difficulty in achieving uniformity of accounting practices due to these environmental (cultural) differences. Policy makers and international accounting educators should recognize this factor and the implications involved.

Limitations of this experiment include the small sample size and non-random selection of subjects for each group. Therefore, generalization from this exploratory study should be made with caution. It nonetheless provides some preliminary evidence on the potential of operationalizing cultural differences in terms of Hofstede's (1980) dimensions and testing these in a variety of accounting contexts and across different national boundaries.

Conclusion

This exploratory study examined auditors' attitude to uncertainty qualification using two distinct groups of auditors across two national boundaries. The results showed that significant differences in auditors' attitude to "subject to" qualification exist for Hong Kong and Australian auditors given identical financial information and contingent liabilities footnote disclosure. These findings are consistent with the UA hypothesis distinguishing Hong Kong as low UA society and Australia as high UA society. Hong Kong auditors, a low UA group, are relatively more secure and thereby more likely to prefer a "subject to" qualification without fear of risk of losing the client than Australian auditors. Future research should focus on the impact of other cultural dimensions such as collectivism and power distance on different accounting and auditing practices. In this way it may be possible to develop a framework for future exploratory studies of international accounting issues.

Acknowledgement: The authors wish to acknowledge the sponsorship from the Research Board of Hong Kong Society of Accountants.

Notes

1. While US and Canadian auditing standards have removed this provision, it still exists in Australian and Hong Kong standards.
2. Another possible reason why an auditor may issue a qualification under these circumstances is to protect themselves in case of litigation. A discussion with auditors in both Hong Kong and Australia indicated that they were more concerned with the immediate problem of losing a client than the somewhat remote problem of potential litigation.
3. The confounding effects for differences in age and experience were checked and found to be insignificant.
4. See Dhaliwal (1980) for an example of the use of a similar *t* test for significant differences between two groups.

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Appendix A

Please examine the attached set of summarized financial statements and, based on the information presented therein, answer the question at the end of the questionnaire.

P.B. Industries Ltd.

Extract of Balance Sheet as at 31 December, 19x4

| | 19x4 (\$) | 19x3 (\$) |
|----------------------------------|-------------------|------------------|
| Share capital and reserves | | |
| Issued and fully paid up capital | 3 369 037 | 3 062 761 |
| Reserves | 3 150 675 | 3 135 976 |
| Unappropriated profits | <u>4 072 877</u> | <u>3 572 077</u> |
| | <u>10 592 589</u> | <u>9 770 814</u> |

Non current liabilities

| | | |
|----------------------------|--------------------------|--------------------------|
| Loans, secured | 2 168 413 | 2 786 136 |
| Provision for income tax | <u>284 591</u> | <u>184 523</u> |
| | 2 453 004 | 2 970 659 |
| Current liabilities | <u>9 678 114</u> | <u>9 445 530</u> |
| TOTAL EQUITIES | <u>22 723 707</u> | <u>22 187 003</u> |
| Fixed assets (Note 1) | | |
| Freehold property | 6 565 982 | 6 571 408 |
| Plant and equipment | <u>2 654 559</u> | <u>2 603 895</u> |
| | 9 220 541 | 9 175 303 |
| Investments | 24 401 | 20 640 |
| Future income tax benefits | 636 972 | 573 239 |
| Current assets | | |
| Stock (Note 1) | 8 802 239 | 8 458 322 |
| Debtors and prepayments | 4 027 818 | 3 948 791 |
| Cash | <u>11 736</u> | <u>10 708</u> |
| | 13 503 166 | 13 011 700 |
| TOTAL ASSETS | <u>22 723 707</u> | <u>22 187 003</u> |

P.B. Industries Ltd.

Extract of Profit and Loss Statement for the Year ended 31 December, 19x4

| | 19x4 (\$) | 19x3 (\$) |
|--|------------------|------------------|
| Net operating profit | 957 781 | 861 561 |
| Add unappropriated profits | | |
| brought forward | <u>3 572 077</u> | <u>3 129 584</u> |
| Available for appropriation | 4 529 858 | 3 991 145 |
| Less appropriations | <u>456 981</u> | <u>419 068</u> |
| Unappropriated profits carried forward | <u>4 072 877</u> | <u>3 572 077</u> |

P.B. Industries Ltd.

Statement of Source and Application of Funds for the Year ended 31 December, 19x4

| | 19x4 (\$) | 19x3 (\$) |
|---|------------------|------------------|
| Source of funds | | |
| Profit for the year | 957 781 | 861 561 |
| Add items not involving outlay of funds | <u>1 505 913</u> | <u>1 450 198</u> |
| | 2 463 694 | 2 311 759 |
| Proceed from share issue | <u>306 276</u> | <u>278 433</u> |
| | 2 769 970 | 2 590 192 |

Application of funds

| | | |
|---------------------------------|------------------|------------------|
| Net expenditure on fixed assets | 676 416 | 759 681 |
| Increases in working capital | 762 723 | 939 385 |
| Dividends paid | 421 129 | 368 924 |
| Payment of income tax | 909 702 | 522 202 |
| | <u>2 769 970</u> | <u>2 590 192</u> |

Notes to Financial Statements**Note 1: Summary of accounting policies**

Inventories – inventories are valued on average cost first-in-first-out basis.

Property, plant and equipment – provision for depreciation is computed under straight-line methods over the estimated useful life of the assets.

Additional information:

Contingent liabilities – The company is defendant in a lawsuit alleging infringements of certain patent rights and claiming royalties and punitive damages amounting to \$500 000. The company has filed an answer denying liability and plans to defend the claim. The ultimate outcome of the lawsuits cannot presently be determined and no provision for liability that may result has been made in the financial statements.

Five-year summary

| | 19x4 | 19x3 | 19x2 | 19x1 | 19x0 |
|--------------------------------|------------|-----------|-----------|-----------|-----------|
| Operating profit | | | | | |
| before tax | 1 711 705 | 1 468 125 | 1 062 952 | 882 958 | 766 629 |
| Net operating profit after tax | 957 781 | 861 561 | 638 578 | 531 138 | 462 570 |
| Issued capital | 3 369 037 | 3 062 761 | 2 784 328 | 2 531 208 | 2 531 208 |
| Retained profits and reserve | 7 223 552 | 6 708 053 | 4 144 336 | 3 867 460 | 2 464 748 |
| Net tangible assets | 10 592 589 | 9 770 814 | 6 928 664 | 6 398 668 | 4 995 956 |

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Book Reviews

Green Reporting: Accountancy and the Challenge of the Nineties *edited by Dave Owen. Chapman & Hall, London, 1992, 299 pp., \$49.95 US, \$62.00 Canada.*

Green Reporting is an excellent overview of business environmental reporting. Twenty-one essays address emerging issues in environmental reporting by industry and government in the 1990s. The various authors agree that "green reporting provides the fundamental challenge facing accountants in the nineties." Green issues are defined as "use of scarce resources, pollution, social impact, and global warming." In recognition of the emerging, complex, and rapidly changing nature of these issues, different viewpoints of current and future environmental reporting are presented.

This well-written book is not just for accountants but also for CEOs, managers, labor unions, creditors, investors, government officials, and individuals. All who are concerned with industries' current and future response to environmental issues will find this an interesting, readable book. *Green Reporting* has a European focus; each essay is relevant, however, to businesses in all societies of our world community.

Several essays discuss potential solutions to the complex nature of environmental reporting. Others address the current and future role and responsibilities of accountants in green reporting, such as the growing importance of environmental reporting as opposed to dollar-valued financial reporting. Information systems design, environmental audits, and annual reporting of environmental disclosures are explained; practical cases and suggestions are included as well as theory.

A central theme of this book is that environmental accounting and reporting will increasingly be required due to growing concerns of the environmental impact of businesses and of the quality of life for present and future generations. Designing information systems capable of capturing appropriate data, reporting qualitative as well as quantitative information and interpreting this information will present a challenge. If industry does not develop environmental monitoring and reporting systems, governments may regulate such systems. Increasingly complete and accurate green reporting should be disclosed to all interested parties either in the annual report or supplemental reports. Consistent, comparable, and independently verified green reporting will be essential. Expanding green reporting can benefit a business; several corporations have found environmental disclosures to be profitable due to investor goodwill and long-run lower costs through control of resources and wastes.

Chapter 1 is an introductory analysis of the accounting and reporting implications of the increasing green awareness in our world society. Incidents such as Chernobyl

and the Valdez oil spill have raised world consciousness and green awareness. The author predicts that as environmental issues move to prominence in political debates, businesses will increasing be required to respond by more careful management and maintenance of environmental assets. Internal reporting systems should include environmental costs of business practices. The author also predicts that compliance with company and governmental regulations, assessment of the impact on the environment of current and alternative business practices, use and disposal of resources, and investment decision models (which include environmental considerations) will be reported both quantitatively and qualitatively. In the future, all levels of decision-making, including strategic, should consider costs related to resources, waste, control, pollution, and other environmental effects.

The author finds most current green reporting to be inadequate and notes that pressure already exists in the European Community for annual or supplemental reports to include accurate qualitative and quantitative environmental information and for a certified environmental audit to be performed. In the future, financial auditors will use this information in assessing viability; in recent years, financial liability for past and current environmental matters has become increasingly significant. During the 1990s, environmental matters will have ever-increasing financial consequences for businesses.

In chapters 2-6, the future of green reporting is the subject of essays by authors representing industry and commerce, trade unions, the accounting profession, green pressure groups, and investors. Industry needs management capable of leading in environmental control and reporting rather than reacting to environmental problems as they occur. Environmental information that is accurate and complete can provide management with an opportunity to gain a competitive advantage, reduce risk and liability, improve long-term planning, and enhance business viability. Employees and trade unions have a duty to emphasize green reporting and quality of life. Labor has a responsibility to ensure that the "polluter pays" principle is followed by business and government. Several authors discuss the responsibility of unions to negotiate equal protection of the external and internal work environment. Unions must stress accurate, complete, and public disclosure of environmental impact. Two case studies illustrating the role of trade unions in environmental protection are included.

Accountants have the responsibility and opportunity to play a critical role in green reporting. Several authors define the unique qualification of accountants to adapt financial accounting systems to budget, control, monitor, and audit environmental matters. Environmental auditing offers a new specialization for accountants. Another opportunity consists of developing a national databank of key environmental information. One author considers expanding the accounting for assets to include the sea and the air. Another author notes that governmental operations have an impact on the environment; therefore, governments must also develop green reporting.

Two essays emphasize the role of green pressure groups in effecting positive change. Pressure groups can work to ensure that environmental reporting and auditing are disclosed to the public and also used by business to improve constantly the environmental impact of operations. Pressure groups can direct industry's attention to major cost savings of waste reduction, increased energy efficiency, and improved

use of productive assets. In addition, pressure groups can remind business and government that wealth includes the quality of our natural environment.

Consumers and investors are becoming interested in the environmental records of companies. Two authors examine the information needs of investors and present suggestions to correct inadequacies in reporting. Changing the definition of profit to include a consideration of the environmental impact of a business's operations (past, current, and future) is considered. Investors need information concerning a firm's use of its resource base and the impact of operations on the environment; in addition, the environmental impact of the consumer's use of the completed product could be disclosed. Environmental liabilities can have significant financial consequences and can threaten viability. The authors conclude that current green reporting does not inform investors of these potential costs or how environmental issues affect the bottom line.

Chapters 7-11 review current trends in green awareness. Current environmental disclosures in corporate annual reports of companies located in Western Europe and the United Kingdom are surveyed; a significant diversity of reporting is evident. Although "generally increasing levels of disclosure are evident," only "a significant minority of corporations provide quite detailed information." Most current disclosures are found to be brief, general, public-relations oriented, and uninformative. The need for environmental accounting standards to ensure consistency and comparability as well as accuracy and completeness of disclosures is illustrated. The importance of "external reporting as a vital mechanism of corporate accountability" is emphasized. The authors include examples of the best current practices of reporting disclosures.

Examples are also included of systems to implement environmental awareness and control at all levels of a company. Several companies' current management policies and procedures to ensure environmental responsibility are included; these include environmental audits, assessments, improvement plans, management structures, and implementation plans.

The interrelationship of the environmental movement and social audits is also examined. A discussion of the "implication of the social audit experience of the 1980s for the environmental movement of the 1990s" is quite interesting. One author considers expanding accounting from its traditional profit base to include return to labor, society, and the environment and expanding the definition of "value" from money to include the enhancement of the quality of life and protection of the environment for future generations.

Current trends in green awareness are also examined from the investor perspective. Two essays address the growing number and importance of socially responsible investors. "What socially responsible investors can do is work to prevent disasters, encourage good performance, and through their investments, make it costly and embarrassing for companies to violate the environment." Full, accurate disclosure of environmental matters by companies is necessary for these investors. One author discusses studies which have shown that "the most socially responsible corporations are often those with the greatest profitability." Ethical environmental funds located in the United Kingdom are included in the appendix.

The final section, chapter 12, is written for "those of the accounting profession who require practical advice on reporting environmental matters." The chapter begins

with an overview of environmental reporting and progresses to insightful advice for the accounting profession and individual accountants. The difference between financial and environmental reporting is examined. Discussing the complexity associated with collecting, disclosing, auditing, and interpreting environmental information is the major point. Attention is given to specific suggestions for developing green reporting systems that include not only "hard data but also ... trends, attitudes and opinions." The author predicts that in the future environmental report data will be published next to financial data in the financial press.

In summary, this collection of essays is interesting and informative; the essays present different views yet complement one another. This well written book is necessary reading for anyone concerned with industry and our world environment.

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